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PHOTOGRAPHIC MAGAZINE

FOUNDED BY EDWARD L. WILSON.

L. W. WILSON, EDITOR.

VOLUME XL.

NEW YORK:
EDWARD L. WILSON, PUBLISHER,
NO. 287 FOURTH AVENUE,
1903.

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February.—"The Bride." By IZAAK DE VOS, Chicago. Illustrations by F. W. VOORHEES, Albuquerque, N. M.; RANDALL STUDIO, Ann Arbor, Mich.; F. G. SCHUMACHER, Los Angeles; E. J. MCCULLAGH, Stockton, Cal.; Mrs. S. CONDON-HENDRICK, Atlanta, Ga.; F. ERNST ZIMMERMAN, Boston; DAVIS & SANFORD, New York; G. OURY, Brussels; C. E. FRY & SON, London, and A. L. JACKSON, Tacoma, Wash.

March.—"Portrait" and seven engraved supplements from photographs by C. DURAND CHAPMAN, Newark, N. J.

April.—"Ancient and Modern Portraiture." (Two portraits of I. W. TABER, from a platinum print.) By I. W. TABER, San Francisco. Portraits by W. N. BRENNER, Cincinnati; F. FLODIN, Stockholm, and others.

May.—"Portrait Group." By GERTRUDE KASEBIER, New York. Eight engraved supplements from photographs by D. ROSSER STUDIO, Pittsburg; GERTRUDE KASEBIER, and ALFRED HOLDEN, Philadelphia.

June.—"Portrait of a Man" and series of eight "Portraits of Women." By S. H. LIFSHEY, Brooklyn, N. Y.

July.—"Portrait of Edward L. Wilson, Ph.D." By SARONY, New York. Nine engraved supplements from portraits by SARONY, New York; J. C. STRAUSS, St. Louis; E. L. MIX, New York; OTTO BOYÉ, San Francisco; BROCK STUDIO, Asheville, N. C., and ELMER CHICKERING, Boston.

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September.—"Portrait of a Boy." By FRED RADFORD, New York. Eight engraved supplements from photographs by C. R. REEVES, Anderson, Ind.; F. GUTEKUNST, Philadelphia; E. L. MIX, New York; C. F. STAMPER, Boise, Ida., and FRED RADFORD, New York.

October.—"Portrait of George W. Melville, Engineer-in-Chief, U. S. N. (retired)." By ELIAS GOLDENSKY, Philadelphia. Eight engraved supplements from photographs by PIRIE MACDONALD, New York; J. C. STRAUSS, St. Louis; W. DIXON BALL, Missoula, Mont., and C. DURAND CHAPMAN, Newark, N. J.

November.—"Portrait." By the GARO STUDIO, Boston. The original of this was acknowledged to be the best example of portraiture at the Boston Convention, 1903. Eight engraved supplements from photographs by GEORGE HABERNICHT, San Francisco; C. A. KRAUCH, Pasadena, Cal.; GERTRUDE KASEBIER, New York; C. DURAND CHAPMAN, Newark, N. J.; JAMES H. REED, New Bedford, Mass., and G. S. NORTH, South Norwalk, Conn.

December.—"Child Portrait." From a platinotype by MOSES & SON, New Orleans. Engraved supplements from photographs by MOSES & SON; C. DURAND CHAPMAN, Newark, N. J.; MILTON WAIDE, New York, and T. E. HOWE, Effingham, Ill.

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XL. JANUARY, 1903. No. 553.

STARTING THE NEW YEAR.

BY W. I. SCANDLIN.

THE opening of a new year has from time immemorial provided occasion for the putting into practice of new resolutions and methods, both in personal and business affairs, and it is probable that this custom will obtain for many generations yet to come. It is, perhaps, a good thing that such an occasion comes once in twelve months, to change the routine of thought and action if only for a brief space of time. For without some such check upon the regular habits of life and thought there would probably come to be more of monotony and sombreness of tone in the picture of every-day life about us than now exists; and this is needless.

New resolutions and methods, did I say? They were new once, but as time has passed they have come to be transmogrified. They are, in the main, to-day the same old resolutions and the same old methods that have been in vogue for many generations, but which with each succeeding year are brought forth from their temporary retirement, given a shake in the air and, metaphorically, dusted off; after this process of renovation they are reclothed and set up in new livery to pose as new thoughts, new methods, and new resolutions. The whole subject would be ludicrous were it not for the serious nature of the groundwork on which the changes are rung.

The foregoing is intended to convey the thought that the writer does not claim originality of idea for the suggestions that follow in this article, but its purpose will be served if he may succeed in bringing together a few thoughts and ideas capable of being worked over and remodelled to fit the beginning of the year 1903 in such a way as to be of benefit to a portion, at least, of its readers.

The subject of a Photographic Opening is one that is so hackneyed as to seem almost a parody as a New Year's suggestion, and yet, if the affair is arranged on the right lines it ought to prove not only effective and educational, but, from the photographer's standpoint, profitable. In the opinion of the writer a reason should exist for every innovation or important action in life and business, and unless some good, reasonable reason can be assigned for a Photographic Opening at this time of the year, it will be unwise, to say the least, to devote time, energy or money to its promotion. But is there not in almost every community a strong and convincing reason that can be brought forth to serve as an excuse for an opening or reception at the beginning of the year?

Photography occupies to-day a higher place in the esteem of the world than at any previous time in its history. The competition in the production of materials has resulted in an ever increasing perfection, and the skill of the photographer of the present time is infinitely greater and more subtle than ever before.

As technical skill and artistic excellence have advanced in the profession the taste

of the public has just as steadily progressed. This may be seen by the rapidity with which the newer and better methods and mediums are appreciated and adopted. If this is the case, does it not furnish a good and sufficient reason for a formal studio opening or reception to be planned for the early part of the year? The avowed object of this opening should be to place before the public of its community a collection of the choicest specimens of photography, representing the best and most modern work of this studio for the past year. Let this opening be run on the lines of an Art Exhibition and not those of a purely business venture. Make the predominating element that of Art, and show only a very small collection of *choice studies* rather than a large number of inferior prints.

It is almost proverbial that the value of an article is enhanced by the difficulty of its attainment, and we believe that this sentiment applies as well to high-class photographic productions as to anything else. If this were not so we should have no Hollinger, no Core, no Strauss, for if these men had not been recognized as masters their work would never have commanded the price it now does. This simply proves that when a photographer has attained a high plane of excellence in any special line of his work there are plenty who will buy his pictures at his own prices.

Let this opening or reception, therefore, be marked by the absence of everything but the best. If some special line of work receives at your hands peculiarly happy and effective treatment, make a prominent feature of this, and let the specimens shown be, so far as possible, the work of the past few months, certainly not more than a year.

Cultivate the press, and in towns or cities of considerable size a preliminary exhibition should be given for the benefit of the press representatives alone. Public opinion is most strongly influenced by the opinions of its favorite daily, and a well-directed local reading notice is often productive of the greatest good. Press representatives should be received on such an occasion and personally introduced to the particular merits of the different prints in the exhibition. An effort should be made to present the pictures to the public as they ought to appear to the man who made them.

The work produced through the holiday season just passed should provide examples of interest in the public eye around which interesting matter might easily be written, and which might thus be made to serve as the basis of a more or less extended criticism in the columns of the daily press. As much publicity as possible should be given to the matter before its occurrence as well as after, and such a move as this ought to provide the means for a progressive photographer to show what he is capable of in the interests of his patrons and of art.

The studio is, in many communities, the only place where artistic pictures may be seen, and this of itself is a reason why every possible opportunity should be embraced for cultivating the art instinct of its patrons.

In such communities the studio should be made the centre of art interest, and should not confine its scope wholly to photography, for if other fields of art are included an opportunity is provided for exhibitions and publicity that may be made extremely profitable. Let the photographer remember that his calling is an honorable one, and that the more he exploits it *honestly*, the more his efforts will be appreciated and the greater will be his material success.

So we repeat, give an opening as early in the year as possible and make it as attractive as you can on art lines. You must get yourself prominently, favorably, and constantly before the people whose trade you desire, and this affords an excellent means of doing it.

Voigtländer and I, by the veteran James F. Ryder, continues to sell rapidly. The present edition will soon be exhausted. Photographers who have not yet enjoyed this delightful volume, with its stories of old days, beautiful illustrations, and hundreds of valuable pointers about studio work, should lose no time in obtaining a copy. It is brimful of useful instruction, and interesting from cover to cover. Price, $2.50, from the office of this MAGAZINE.

THE SAVING OF PLATINUM WASTES.

BY A. J. JARMAN.

THE production of photographic prints by the platinum process has of late years been employed to a considerable extent by the professional photographer; by some, to the entire exclusion of all other papers, owing in the first place to the alleged permanency of the deposited platinum, and secondly, to the beautiful results obtained from an artistic point of view. About twenty-four years ago the hot-bath process of producing black images in platinum was invented by Mr. Willis, and for many years considerable effort was made to introduce this beautiful process to the notice of photographers, with a view to its general adoption. The writer has some 6½ by 8½ platinum prints made twenty-two years ago by the hot-bath process.

At this period all waste solutions were thrown away in the course of manipulation. The few photographers interested in the saving and refining of silver and gold from printing-room wastes turned their attention to the saving of platinum waste, but even this was gradually abandoned, owing to the fact that platinum printing was not general as it is to-day. The process then employed consisted of collecting the various developing solutions, boiling them down in a large evaporating pan (of Berlin porcelain) and adding hydrochloric acid and chloride of ammonium, so as to form a yellow powder, known as ammonium-chloro-platinate. This, upon being heated to a white heat in a crucible, produced a residue of platinum black, or spongy platinum. The directions issued by the manufacturers of the paper usually informed the photographer that the acid-clearing solutions used after developing might be thrown away, as they were not worth saving.

In the present article it will be shown that it is from the first acid clearing (or fixing) solution that the most platinum is obtainable. It was in the year 1892 that Willis made the important discovery of depositing platinum in the cold state to form the photographic image, resulting in the cold-bath method now universally used. From that year dates the rapid progress of printing upon platinum paper, while since that time various silver papers made principally with a collodion silver emulsion have been toned with platinum solutions to stimulate the effects admired in the platinum photograph. By the introduction of these processes the salts of platinum have been in considerable demand, and has steadily advanced in price. Strangely enough, no attempt has been made, even by large consumers, to save the waste solutions, paper clippings and cuttings that contain such a valuable metal as platinum, The general idea among photographers is (held by photographic printers especially) that platinotype wastes contain so small amount of platinum that it is not worth the trouble of saving. Such an erroneous belief as this can only arise from a want of correct knowledge upon the subject. Every photographer and printer is well informed about the saving of silver wastes, and puts this knowledge into practice daily. Why not devote a little time to the saving of platinum wastes? The following figures may surprise many who read this article. At the present time silver is only worth thirty-three and one-third cents per ounce. Gold is worth twenty dollars and eighty cents, while the metal platinum is twenty-two dollars per ounce. Seven years ago platinum could be bought in New York for eleven dollars per ounce. The cause of this enormous rise in the price of platinum is found in the widespread use of the metal in the electrical industries and also in its increasing use in photographic processes.

Apart from their use in making platinum papers, the salts of platinum are also used to a very large extent for the second toning of nearly all the collodion silver emulsion papers so largely in favor at present. It being known that these toning solutions contain but a small quantity of platinum, they are invariably thrown down the sink as not being worth saving.

Not one ounce of any of these solutions should be thrown away, nor any of the paper clippings that have been trimmed from photographs toned with platinum.

Unlike the solutions used in the hot-bath process, where the old developer contained most of the platinum and the acid bath the least, in the present method of cold development, the first acid bath contains the greater amount of the metal and the developer the least. The method of saving and collecting this waste from the first acid bath and discarded developing solution is as follows. In an ordinary photographic establishment where the number of prints amounts to two hundred to four hundred per day, from cabinets say to 8 by ten, procure a six or eight gallon stoneware crock with lid. Place this crock at the end of the washing sink that is least used in every-day working, so that it may be easily tilted when required, instead of lifting from the floor. Into this crock put five or six pounds of scrap zinc. When the platinum prints have been removed from the first acid-clearing solution pour this acid into the crock upon the zinc, close with the cover, and allow to stand until the next morning. Or, if the crock is not yet full, pour in the first acid bath of the next day's batch of prints. Then stir the solution round and round with a clean planed strip of wood kept for the purpose, and make sure that the scrap zinc is stirred well also at the same time. If the crock is full allow it to stand until required for use again. Then remove the cover and carefully tilt it so that the clear liquid is drained off, down to the muddy-looking precipitate. Do not allow any of this precipitate to be poured away, because this contains the platinum which it is desired to save. When drained, return the crock to its vertical position. When all is ready to receive the next lot of acid-clearing solution used with either sepia or black papers, or defective developers, throw all into the crock.

It will be observed that these acid solutions when poured into the crock are of a yellow color, owing to the presence of iron and platinum from the surface of the paper. The scrap zinc has the property of combining with the bases of these iron and platinum salts, forming chloride and oxalate of zinc, while the metals iron and platinum are thrown down as a precipitate. All toning solutions containing platinum should be thrown into the crock with the other material. No matter how much the quantity of platinum it may contain it will be thrown down in like manner.

After a few weeks' repetition as above it will be found that the zinc is gradually disappearing and a bulky, gray-looking precipitate is forming at the bottom of the crock. It will now be necessary to collect this gray mass, which is easily done by employing a large glass funnel of the capacity of a gallon, and placing therein two filter papers with a light piece of absorbent cotton placed across the stem of the funnel, upon which rests the bottom of the filter papers. The object of this is to prevent the paper from breaking on the receipt of the precipitate. The contents of the crock can be removed with a small basin or large teacup and poured into the filter. Any pieces of scrap zinc observed in the mass must be picked out and put aside for future use.

As soon as the contents of the crock have been transferred to the large funnel the scrap zinc should be returned to the crock and a pound, or two or three, added. The process of throwing in all and every solution containing any platinum, no matter how small, should be repeated daily. It will be clearly seen that to save the platinum by this method gives no more trouble than throwing the solutions down the sink.

If a considerable quantity of platinum paper is used daily, say ten to fourteen rolls, which is the practice in some houses, then a series of crocks, say three, each to contain six or eight gallons, should be conveniently arranged so that they are easily accessible and can be readily emptied when required.

Each pound of the precipitate mentioned will contain when dry about forty grains of pure platinum. The writer has extracted this amount from the above kind of waste upon several occasions, and in every case where this method of saving has been adopted it has given the greatest satisfaction. Of course, the bulk of the waste mainly consists of oxalate of zinc, oxalate of lead, small quantities of cadmium, arsenic and metallic iron, these being the impurities contained in the scrap zinc.

All paper trimmings and cuttings of platinum prints should also be saved. Reserve a good-sized box for this purpose. When full, press well down until a fair quantity of these clippings, spoiled prints,

and cuttings has been obtained. Send them, together with the dried precipitate from the solutions, to a reliable firm which undertakes the refining of platinum wastes. Do not mix silver paper cuttings with the platinum clippings. It is far more profitable to the photographer to take a little care in this matter, because it costs more for the separating of the silver and platinum in the process of refining.

The following will give an idea of the value of the platinum waste for even a small quantity. Ten to twelve pounds of paper cuttings, clippings, and spoiled prints (no matter whether black or sepia), with five to six pounds of dried precipitate from the acid-clearing solutions, will yield the photographer from twelve to fourteen dollars after deducting the cost of refining. It may be clearly seen from this that many photographers are throwing away hundreds of dollars annually by not saving their platinum waste.

Do not use a wooden cask or tub for saving the platinum waste solutions, as this would be wasteful, because the pores of the wood take in so much of the finely-deposited platinum and would yield but little when the cask be broken up, dried and burned to extract the metal. Any material adhering to the sides of a glazed earthenware crock is easily washed off and secured.

Gold solutions should be saved in just the same way. Old toning solutions, defective toning baths, with the wastings of large bottles that contained gold solutions should be thrown into a separate crock, with a few pounds of scrap zinc, together with an occasional quantity, say half a pound, of common muriatic acid. Stir the contents well, when the whole of the gold will be precipitated. If this method is carried out for a single year, and the precipitate saved in the same way as that directed for platinum, the profits arising therefrom will prove a revelation to any photographer that will take the little trouble to save the wastes of his printing-room instead of pouring them down the sink.

Oftentimes photographers have been dissatisfied because the returns from their wastes have been small. This is entirely their own fault, and has been brought about through their mixing all kinds of wastes together, platinum, silver and gold, and trusting to the refiner to make the proper separation. This, of course, he is well able to do, but the cost of this separating must be paid for out of the material refined, with the result that the cash returns are small. Let the photographer undertake the saving of his various kinds of waste upon the lines pointed out in this article, keeping the platinum, gold, and silver separate. Mark the packages when sent to the refiner, so that he may know the exact nature of the material to be refined, thus: "Platinum waste precipitated by zinc," "Gold waste precipitated by zinc." This will not only make matters clear to the refiner, but will prove more profitable to the photographer.

The old-time methods of collecting platinum waste by the boiling-down process was impracticable with the photographer. The method here described will be found both simple and practical, and will form a source of considerable profit instead of an unprofitable waste.

SUGGESTIONS FOR WOULD-BE PICTURE-MAKERS.*

BY H. SNOWDEN WARD.

PLEASE note that the statements which occur in the following pages are suggestions, not dogmas. At the same time, I believe them to be true. None of them is, however, complete without modification by several of the others. Rules are made to be considered, not to be blindly followed. The greatest success of the greatest artist may be made in apparent defiance of one or more perfectly sound rules, but such defiant successes are *not* made by chance.

My suggestions do not form a complete code, and no amount of suggestion or instruction will take the place of personal observation, reflection, and imagination. But if the following paragraphs were carefully

* Extracted from Photograms of the Year 1902.

considered by all who send their pictures to our greater exhibitions, probably 70 per cent. of the pictures would never be submitted, and a great deal, even of the accepted work, would be better than it is.

It is well to impress the fact that observation, reflection, and imagination are all needed in picture-making. Art is "nature seen through a temperament." Without observation, our art becomes a travesty of nature; without reflection, our work falls far short of our ability; without imagination, our results may be good records, but only by an occasional accident will they have any claim to be pictures.

In a wide experience of workers' comments upon the constructive criticisms given to them by some of my colleagues of *The Photogram* I find a frequent demand for technical suggestions. It seems to me that technique is scarcely the subject for the critic. If he tells the worker that his print is in fault through lacking gradation in the shadows and in the high-lights, it is surely for the worker (who knows the circumstances) to decide whether the fault could have best been remedied by a different lighting of the subject, by use of isochromatic or backed plates, by different exposure, or by modified development and printing.

There is one technical suggestion, however, which might with advantage be carried out by a large proportion of our exhibitors and would-be exhibitors. That is, to devote a few hours or days to studying the use and advantages of isochromatic plates with light filters, as compared with ordinary plates without light filters. My colleague who criticises the exhibitions has written so much in the last two or three issues of this annual about faulty tone-rendering, that a friendly commentator in *The Amateur Photographer* begs him not to make a fetish of "tone." But this fault is almost universal in photographic work; so much so, indeed, that some painters believe it to be an inherent defect in our photographic process, instead of a fault due to the ignorance or indifference of photographers. And if a defect is so common, and is avoidable, the honest critic *must* harp upon it until his readers learn to overcome it.

Much of the bad tone-rendering comes from neglect of isochromatic methods, and this subject is the most profitable one to which pictorial photographers can at present direct their attention—on the technical side.

The use of backed plates, or of films, though less important, is still well worth consideration, and has advantages in many a case where halation is not ordinarily suspected. It is perhaps unfortunate that we have been accustomed to the extreme cases of halation, the church window in its surrounding of gloom, and the white lace on a black velvet gown. But halation is responsible, also, for the destruction of detail in many high-lights which are not surrounded by black. It vignettes the delicate tracery of leaves and twigs which should be sharp against the sky, and gives us bald, ill-defined patches to represent what should be delicate texture in glossy leaves, in the high-light on the breast-plate of a warrior, in the diaphanous drapery of a child or woman, and even in the high-lights of a face.

I have spoken of observation. It stands first in the artistic trinity. It is the work on which the artist can always be engaged while he has daylight and eyes. The faulty tone-rendering of which much complaint is made comes not from inability of photography or photographers to record, but from want of observation, which has prevented the photographers realizing any lack in their pictures.

Red-brick, red-tiled cottages are common objects of the country, but few photographers know that even on a night when there is no light save the stars, the roof, and the walls of such cottages are distinctly different in tone value. Few photographers, probably, know how twilight affects reds and blues, but if they will spend one evening in a summer garden, or a greenhouse, observing the changes as dusk fades into dark, they will see that the reds are the first to cease reflecting light. The way in which the brilliant scarlet poppy becomes intensely black, while the light remains sufficient to distinguish different shades of green, is quite startling. Red and pink geraniums are a little later in losing their power of reflecting color; and as they become black, shapeless masses, the whites and blues among the flowers become brilliant as compared with the greens.

Thus the effect of twilight upon colors is the same as the effect of an "ordinary" plate.

The effect of twilight upon light and shade is quite different from what many photographers believe it to be, and it is a curious fact that in many cases detail becomes more visible in the shadows as the light declines. My study windows look out upon masses of sequoias, pines, and other evergreen trees which give glimpses between their branches of rich depths of shadow. On a brilliant day, when the trees are bathed in sunshine, only the most prominent details in the shadows can be seen, but as clouds obscure the sun, or as evening approaches, the vistas become much more rich in detail, although the light falling on the front of the trees is so much less. This effect is probably due to the dilatation of the pupils as the light decreases, which makes the eyes more sensitive to feeble light-differences; but, whatever may be the cause, the fact is generally ignored by photographers, who give us absolutely flat black shadows in their "evening" effects.

The tender translucent foliage of the silver birch is one of the most beautiful details in the spring greenery, and it tempts many photographers. Yet when they have represented every leaf as a black metallic-looking object against the sky, it never seems to occur to them that their record has failed, but they cheerfully label the resulting print "Spring," and send it to an exhibition. Observation shows that the leaves do darken considerably as the end of July and beginning of August approach, and that some trees (? as the result of aphis blight) are almost black, but this is not seen in "Spring."

Similiar remarks apply to the leaves of the beech, as, indeed, in a lesser degree to all leaves. . . . Taking this single point of the rendering of shadows, and looking around the exhibitions of last year, it was easy to find twenty or thirty works which might well have been refused by the selecting committee for glaring faults. And the submission of these pictures proves how incapable many photographers are of correctly observing the most obvious and common facts.

Perhaps one reason for faulty observation is that photographers generally try to get far away from home, into unfamiliar surroundings, to attempt "exhibition" work. They have missed the primary fact that the main beauty of a picture comes from within the artist's soul, and has no relation to the unfamiliarity or quaintness of the subject.

Reflection, though I place it second in the artistic trinity, is not of less or of greater importance than observation or imagination. The photographer who really reflects upon his work, eliminates chance from his results, and whether his pictures may be considered good or bad by the critics, he at least gets certain results, because he aims for them. To do the right thing is good; but to know *why* you do a thing, even though it may be wrong, is better. Observation helps one to make the best of a given scene or model; reflection enables one to know whether that scene or that model is the best obtainable for the purpose in view; whether, in fact, it is worth photographing at all. Reflection enables us to compare the subject before us with the ideal, with other subjects previously seen, with our own previous work, and with the work of others. And reflection, applied to scenes and conditions we have observed, as well as to those which others have recorded, sets us deliberately to seek for certain combinations of subject and condition which shall satisfy our own ideal—or as nearly so as may be.

Having applied observation to nature, and gathered a store of facts, some of which we wish to record, reflection brings us to the sense of limitations—our own and those of our processes. We know that we are limited to monotone, therefore, we must bar any subject which chiefly depends for its beauty upon subtle coloring. We are limited (practically) to a representation of objects as they actually stand before us, and cannot enlarge, reduce, omit, and add, as can the painter; therefore, we must bar many subjects which the painter would find inspiring. Our scale of gradations (from white paper to black pigment) is shorter than the scale in nature, therefore, we must decide which particular part of nature's scale we will omit or compress.

Reflection is an artistic function which can be exercised even in darkness, wherever one may be: and it should be very fre-

quently in use, comparing, selecting, and criticising ideas and arrangements. It should be especially applied to work we have already done, and many will be surprised, if they have not tried it already, to find how wonderfully a pictorial idea can grow in a twelvemonth if one simply thinks about the existing attempts at its realization.

Imagination, though mentioned last in our artistic trinity, is a quality most necessary to the would-be picture-maker. While observation and reflection deal with facts, imagination deals with ideas; while observation and reflection will make a good craftsman, imagination gives the distinctive touch that marks the real artist, the genius. Imagination is difficult to define, and many people think that it must be an innate property and cannot be cultivated. It is true that the artist, like the poet, is "born, not made," and it is true there are many people quite devoid of imagination; but anyone who has a real desire to make pictures has an imagination which can be cultivated and used far more than this faculty has been by any but a very few of our photographers. Charles Godfrey Leland, author of *The Breitmann Ballads* and designer of the Useful Arts and Handicrafts series of books, says: "The most difficult part of making is to know what to make;" and this, in spite of Portia's oft-quoted opinion to the contrary, is very true in matters artistic. The knowledge of what to make or what to do is given by imagination.

Imagination deals with the souls or thoughts of pictures, and is as necessary to the critic who would understand an artist's thought as to the artist who would make his thought understandable. It has to do with the sentiment of the composition, the "feeling" of a landscape, the character and individuality of a sitter. It is cultivated by seeking its evidence in the work of others, and in the work of painters rather than of photographers; by reading and attempting to understand good literature, especially that of the poetic and imaginative school; by living as much as possible among the best in art, whether it be architecture, music, or drama; and by attempting to appreciate (which is very different from merely admiring) the finer aspects of nature. The man who makes a good "Study of a Tree" must have observation; he who properly photographs "Sunshine in an Orchard" must have reflection; but he who can realize for us the glory of "Summer" must have imagination also.

I have said that the critic must have imagination as well as the artist, and this reminds me of a gentle rebuke administered by a lady to a photographer who was fault-finding in an exhibition. He said: "I can't see anything to rave about in So-and-So's work," and the lady simply replied: "No, you can't see." The cultivated critical faculty that can "see" the good as well as the bad in a man's work, and the imagination to grasp the artist's intention, are necessary before we can appreciate or learn from the works of others.

Imagination has to do with the design of the picture. This is a greater thing than the mere composition, or the arrangement of masses, and light and shade. The ordinary photographer goes forth into the world making many negatives; toward exhibition time he sorts out half a dozen or so of "things which will do" for the exhibition; then he looks at the prints to see whether they suggest any thoughts to his mind, and ransacks his memory and his books of quotations for titles expressing those thoughts. The better way is the exact opposite. Choose your thought or idea, collect or seek for the objects and conditions in which it is embodied, then attempt to make negatives and prints which will reveal the thought to others.

THE growth of the American Aristotype Company is graphically told by the announcement on our fourth cover, where the famous Aristo Bird is seen breaking the bounds. During the many years this enterprising house has catered to the needs of American photographers it has steadily improved its well-known printing papers and largely helped to place the printing department of the average gallery upon a satisfactory and successful basis. For this work, accomplished at considerable cost and labor, the American Aristotype Company deserves the highest praise as well as the generous support of the fraternity.

CYKO PRINTING BY MAGNESIUM LIGHT.

BY F. E. FAIRBANKS.

PRINTING of the gaslight development papers may be much simplified and much time saved by the use of magnesium tape for making the exposures. I have used it personally for several years, and recommended its use to a great many people, and almost without exception they have adopted it enthusiastically.

Among the advantages are a gain in uniformity and a saving of time, especially with dense or pyro-stained negatives. When correct conditions for each negative are ascertained, results may be duplicated indefinitely, the amount of magnesium tape burned governing the amount of light, and its distance from the negative its intensity. Its use is very inexpensive, as an ounce of the tape will expose a great number of prints, the quantity used for each exposure being exceedingly small.

The most of my negatives come within these limits, viz., one-half to three-quarters of an inch of magnesium tape burned at a distance of from twelve to eighteen inches from the printing frame, using Carbon Cyko. Exceptional cases, however, require special treatment, very thin negatives being exposed at a greater distance from the source of light, and very dense negatives much nearer—say six inches away—and perhaps a larger quantity of magnesium used.

The correct exposure may be determined by trial exposures on small scraps of paper, and when found noted on the negative envelope for future guidance. A convenient way of working is to have a board—with a lighted candle at one end—on which to ignite the magnesium, and spaces marked thereon—6, 12, 15, 18, and 24 inches from the candle. The printing frame being placed at the proper distance from the candle, the correct amount of magnesium tape held in a pair of plyers is ignited in the candle flame and allowed to burn, exposing the print, which is then developed as usual.

Personally I expose the print in one room and develop in another; that, however, is a matter to be governed by personal convenience and conditions. One detail may be noted. There seems to be a difficulty in igniting a piece of the tape shorter than half an inch in length. Why it is so I do not pretend to explain, but simply note the fact.

In cases where with thin negatives they would be overexposed with this quantity of tape they can be controlled by exposure at a greater distance from the source of light.

Personally I like a brilliant print, and it has seemed that the result was best attained by short exposure to intense light—*i. e.*, as near the source of light as could be done without overexposure. I think that a trial of the above will please you.

ABOUT A NEW SUBSTITUTE FOR ALKALIES IN PHOTOGRAPHIC DEVELOPERS.

THE number of organic combinations capable of developing the latest image on a plate is very large, although comparatively few have become established in the daily practice of the photographer.

These developers contain, besides the real developing substance, a sulphite, and with few exceptions, a carbonate or caustic alkali.

These exceptions are only two: Diamido-phenol and diamido-resorcin, which have the property of developing exposed plates or films without the aid of an alkali.

As every photographer knows from experience, strong alkalies, especially caustic solutions, attack not only the skin, but also the gelatine of the plate, causing the film of the latter to frill and, in warm weather, even to separate entirely from its support. On that account acid developers would seem to be preferable. But the two substances here considered, amidol and

diamido-resorcin, do not keep in solution, are not controllable, and tend to weakness or lack of density in the image.

Ever since organic developers were first brought forward the search for a substitute for the injurious and inconvenient alkalies has been kept up.

Many such substitutes have been proposed in the course of past years, but none was quite satisfactory. Lithium hydroxid and lithium carbonate are too expensive. Borax and bicarbonate are too weak. Tribasic phosphate and ammonia are also unsatisfactory, the one on account of its rapid decomposition, the other on account of its volatility and pungent odor and its inclination to fog the plate.

The most interesting experiments in this field have been done by the brothers Lumière and Seyewitz with the series of amines. As the results of these experiments, we have to mention that the fatty amines have proved themselves far more energetic in developers than ammonia, from which they are derived. While ammonia gives much weaker negatives than even the carbonate alkalies, the amines far surpass these in effect, particularly with hydroquinone and pyro, and fully equal the caustic alkalies in power. Especially advantageous is the effect of trimethylamin, uniting great force with perfect freedom of fog. But its offensive odor has and probably will bar its adoption.

Now we have found a number of substances which combine the remarkable effect of the alipathic amines with other qualities that are indispensable for practical use: cheapness, durability, and freedom from bad odor. These substances are the alkaline salts of glycocoll (amido acetic acid) and their alkyl derivatives. These salts are very soluble in water, are colorless, without odor and of perfect keeping quality, either in the dry or aqueous state. They not only take the place of potassium and of soda alkalies in all organic developers, but in equivalent quantities produce, with most developers, greater vigor in shorter time. Most effective is this action with pyro, which, with sulphite and amidoacetic acid salts, becomes a first-class rapid developer. By substituting in the usual pyro potassium developer the potassium by even only half the equivalent quantity of amidoacetic acid soda, a developer is obtained that greatly surpasses the other in rapidity, vigor, and clearness. The resulting negatives are of a pure black color, even when ten plates are developed in the same solution. In concentrated form this developer keeps perfectly, does not make the skin slippery, and, even at a high temperature, does not attack the gelatine.

A very excellent developer for bromide paper and transparencies is obtained when in the well-known amidol-potassium developer a corresponding quantity of amidoacetic acid soda is substituted for the potassium, increased rapidity and vigor and exceptional clearness resulting.

It was not our desire to increase the number of developing substances on the market. We consider it of greater importance that we succeeded in finding a substance which not only advantageously replaces the usual alkalies in all organic developers, but so increases the developing power of most developing agents as to produce developers with new characteristics.

A patent for the new product has been applied for the Meister, Lucius and Bruning, of Hoechst, Germany, who are putting upon the market, under the name of "Pinacol P," a concentrated developer containing pyrogallol, amidoacetic acid salt and sulphite in proper proportions, a developer, which, while retaining all the good qualities of pyro, works much quicker, yet more vigorously, with absolute freedom from veiling or fog.—*Translated from Photo Correspondenz.*

The papers given elsewhere in this issue, dealing with "The Saving of Platinum Wastes," and "Printing Cyko Paper by Magnesium Light," should not be overlooked by our readers. Both articles are written by experienced workers from their actual working of the methods described.

Two very attractive backgrounds for children's portraits have been introduced by George Murphy, Inc., New York. Illustrated descriptions of these grounds can be had on application. The New Eagle Embossing Press announced by this house is a specialty of great usefulness in these days of individual mounts. We commend it to our professional readers.

MOUNTS AND MOUNTING.*

BY J. W. EADIE, AIRDRIE.

THE territory of photography is undoubtedly a wide and increasing one, and the pioneers in its domain have ever something new and interesting to lay before you. Alas! I am no pioneer, and the field of the past has been so thoroughly surveyed, its lodes so accurately located, and its veins so persistently and successfully mined that little is left one now but the opportunity to potter around about the "tailings," so to speak, in the small chance of turning to account some overlooked trifle, the contemplation of which in the absence of greater finds may serve to encourage us in our pursuit.

It is just such a trifle I offer you to-night. It may repay your attention, or it may not, according to your previous experience and success; and while I can never hope to claim the attention of the advance guard, I may still be able to whisper advice to recruits in the ever-increasing army of art-science.

We are all ready enough to expose plates (a hand camera that carries less than a dozen is considered a drug in the market) —we are, as a rule, fairly eager to develop them; we may even exhibit anxiety occasionally about our printing; but from this stage enthusiasm rapidly evaporates, and he is indeed an amateur to be envied who possesses even an unmounted copy from each of his printable negatives. "Oh! mounting! that can be done later, at any odd moment—it's a small matter, almost beneath notice." Alas! it is too often considered *beneath* our thought; the notion that it is *beyond* it I shall endeavor to dispel.

Whatever advantages the title of this discourse may claim—and I here acknowledge it provides a very wide scope—it has the disadvantage of possessing a certain sphinx-like quality, a feeling of the great unknown. As I have already alluded to the level I wish to reach, viz., that on which stand those having something to learn of mounting, I may be permitted to indicate the section I wish to work. This may be most rapidly done in a negative manner. I shall say nothing of the ordinary commercial cabinet; of the mounts selected to convey mementoes to our friends (unless special friends); of that article beloved of the lazy amateur, the "slip-about" mount. Neither shall I by implication or reference further the interest of any particular manufacturer of mounting compound, but assume that you have the means and ability to evenly apply a good adhesive to a *good* print, and spend all my time in trying to help you to decide on what you will place it.

Notice, I say, a *good* print. By that I mean a print which is the result of care in the preceding operations of selection, development, and printing—a print that contains some thought or feeling you would wish to convey to others; a print, in short, that holds part of yourself, and that, whatever others may think, you are not ashamed to be judged by.

In a large photographic society there are almost sure to be those who take up photography as a pastime or relaxation, and who are able to command the time of, and willing to relegate the trouble to, experts.

Again there be those who belong to the great army of "snap-shooters" (I detest the word, but it is current), and who are quite content if they get say ten hits out of twelve shots, even supposing these are only "outers" in every sense of the word; while on the other hand there may be many who have attained and long since passed the limited range of my remarks. All of these, to quote the Duke of Plaza Toro, "may allow their attention to wander." I shall not interest them. But the real "amateurs," the "lovers" of our science —art—craft—call it what you will, may find something interesting or new here or there in what I say, and it is to these, as a brother amateur, I submit this lecture.

"Addressing then the attentive gentlemen," to quote once more, why should we mount our photographs? Well, this is a question that would have admitted a much

* From the Transactions of the Edinburgh Photographic Society.

simpler answer ten or twelve years ago. Mounting was a necessity then, and although a necessity, strange to say, there was less attention paid to the subject than now, when the needs are less clamant. Prints being for the most part on albumenized paper, had a tendency to retire upon themselves in a bashful but persistently irritating manner, unless closely attached to something that would supply sufficient "backbone," so to speak, to meet the public gaze. Any good white or cream board, and plenty of it, was considered good enough for this; and as thoughts on mounting seemed to run to area, and white boards were fairly cheap, a speck of print was usually sailing on a sea of mount. This "unrelieved expanse of ocean's gleam" ultimately began to pall on some man with ideas, and he got to confining his cruises to one side the line, or rather series of lines. But this still left him plenty of sea-room. Someone else, recognizing the improvement, "went one better," and taking up the ends of these lines, he crossed and re-crossed, tacked, and came about in the most complicated manœuvres, till the onlooker was as much at sea as the print.

Then came the advent of the use of color boards. If the mount-maker was lavish in line, he was positively prodigal in color. Purple, maroon, green, and gold (especially gold), singly and in combination, matt on matt, he piled them up, and having experienced the scope for variety in line, he pressed that also to his service. Dome and square, oval and rectangle, not to mention fearful and wonderful shapes beyond the limits of a geometric vocabulary, all striving in strident tones, and producing an effect of barbaric splendor which in its own medium outstripped anything "Tschaikowsky" ever dreamed in his. One would have thought that such examples of misdirected genius were long since decently buried; but there may be found for sale at the present day a new mount which, while being pitched in a lower key and appealing in smoother harmonies, succeeds nevertheless in completely smothering the print in the embroidery of its themes. As a specimen of marquetry it might reach excellence; as a mount it is simply excess.

The gray dawn of the bromide and platinotype period came in a restful change, and ushered in the day of the "plate-sunk" and "India-tint" mount. In these later times hypercritical people have, with and without reason, condemned the "plate-sunk" mount, and it may be interesting to speculate on the cause of its adoption and its long run of popularity.

The first batch of prints in black-and-white, when shown to that ubiquitous and all-round critic, "the man in the street," drew from him the exclamation, "How unlike photographs;" and his hasty and ill-formed conclusion has been stereotyped and set in nearly every photographic art critique to the present day. Certainly they were unlike the photographs he had been accustomed to, and more like the familiar engravings, lithographs, or etchings of the printsellers. This was also recognized by their producer, and he saw that different treatment would be required in mounting.

Now photography in its art infancy has too often been tempted to imitate its elders, and while imitation is the sincerest form of flattery, that flattery is not to the imitator. Hence when the maker of mounts boldly annexed the idea of India-tint and plate-mark from the province of plate-produced impressions, he made two very grievous blunders. First, he aided and abetted the uninitiated in forming a false notion as to the nature of the prints; and secondly, he made the more flagrant but less-censured mistake of putting his plate-mark *outside* his tint.

The effect of plate-mark and tint on a white mount or broad-margined impression is decidedly good; but as I will show later, it might have been arrived at in a manner which would have saved us for many years from much adverse comment. But taking the much-maligned plate-sunk as it is, no one can deny its superiority for photographic purposes to its predecessors. Until recently, grays and gray-greens were the only shades to be had in this style of mount, but the infusion of art principles into photography, and the concomitant higher demands by the persistent amateur, has gradually changed all that, and at the present time no one can grumble at the paucity of tints in mounting boards, so

that there can be no excuse for inharmonious mounting.

Having arrived at present-day conditions, at this stage the question may be repeated, Why mount our photographs? Well, in many cases there is no reason why we should—and we don't. Photographs on heavy paper framed close up, and small prints on heavy paper with wide margin, such as may be got by printing in carbon, ozotype, gum, or platinotype, may with advantage be left unmounted. In two of the prints here shown the India-tint effect is obtained by legitimate photographic means. The papers (bromide or platinotype) are exposed in a frame with clear glass front and of sufficient size to take paper the full size of the finished picture. A mask is cut showing size to be printed, and the part cut from this mask carefully laid aside. The mask is then laid on the clear glass front of the printing frame, negative adjusted, and paper inserted to print. When printed the mask is removed, and one with similar shape, but quarter to half-inch larger, is inserted, the piece cut from original mask is carefully adjusted to cover the part already printed, the whole inserted once more in the frame, and a slight exposure given. This gives a band of selected width and varying depth all round the print, leaving the picture and white margin as before. A similar method was adopted with the bromide print, but the band was printed *after* the central part had been partially developed, to aid in accuracy of centring. The other unmounted examples are on platinotype C C paper, brush developed.

But these means apart, prints are mounted, consciously or unconsciously, for three chief reasons: (*a*) To isolate the print from its surroundings; (*b*) to enhance its good qualities; (*c*) to counteract its defects. I shall just say a word or two on the first reason, and deal with the second and third together. The amount of isolation a print requires depends a great deal on its surroundings. A print to be viewed in a room may not require such strong treatment as one for exhibition, where all the prints are adjacent, and each crying aloud for recognition. Hence heavy exhibition frames seldom appear to advantage unless in a large room, while portfolio prints admit of much daintier dressing. In this, as in many other points in mounting, a good deal depends on the point of view.

The effect of a mount to enhance or mar a print may best be shown by experiment. Taking the two extremes, a white and a black mount, it will be noted that a gray print looks grayer on the white mount, but brightens up considerably on being placed on the black one. The selection will depend on the impression to be conveyed, always bearing in mind that there is a considerable range of mounting tints between white and black. There is nothing so easy to deceive as the human eye, and taking advantage of this, it will be seen that we have here, at one and the same time, a means of enhancing the qualities of our print or of apparently removing some of its defects.

But if we are to spend time on the isolating and enhancing properties of our mount, let us take care that we do not unduly burden it with the task. Has the print itself got good qualities, or negatively, not too many defects? Have we cut down all superfluities and disconcerting unnecessaries? Have we isolated the print as much as possible in itself? A good way to find this out is to employ two pieces of neutral-tinted cardboard cut in the form of the letter L, and by moving them about over the print, find out how much can be done without. How many pleasing pictures lie lurking unseen in the weary expanse of large prints. The lens does not discriminate. One may of necessity be tied to a certain size of plate and a fixed focus of lens, but not to one size of paper when there are trimming knives in existence. Better far an inch of interest than a foot of futility. If a twelve by ten print contains but a ten by two picture, let that same knife have free exercise.

But you may urge, how about mounts? A dealer can hardly be expected to stock such odd size? Well, hardly. The poor man has his own share of life's little worries at our hands without increasing the burden. He may carry a wide range of boards, and a full stock of cut mounts, but these necessarily will be of well-known sizes, usually corresponding to the proportions of our plates. So it comes to this:

either you must trim your print to suit your mount, or cut your mount to suit your print. Having made up your mind whether mount or print is of most importance, the answer is obvious.

This brings us face to face with the fact that the man who wishes to preserve the individuality of his prints must make his own mounts, and having once begun I can hardly fancy him returning to the old order. For he thus frees himself from the bonds of the mountmaker and the dealer's suave—"Very sorry, sir! Just out of that particular size at present. Expect them in every day, etc."—these all become echoes of the past. He will have no difficulty in having his ideas carried out, and be saved many barren explanations. And lastly, if he prints in any of the permanent processes, as he is most likely to do, he will be able to use odd pieces of pulp or strawboard which will reduce his mount bill considerably. It is advisable to have always on hand a sheet or two of large board, say 25 inches by 30 inches, and a few sheets of facing paper, and the amateur is equipped to meet the demand of odd sizes and delicate colors better than the largest stocked house in town.

Now, assuming that the advantage of home-mounting is acknowledged, the selection of a suitable mount for a particular print will depend mainly on three things, viz.: texture, tone, and tint. Though circumstances demand that we should consider each of these prints seriatim, they are closely allied, and have a mutual effect, working together to a common end. By the texture of the mount is meant the comparative coarseness or fineness of surface, and on this matter I wish to call attention to two points only. First, rough and smooth are comparative terms, and vary, or seem to vary, like tones, according to the quality or tone of the immediate surroundings. Hence, a smooth-surfaced print will appear by comparison smoother on a rough mount than on one with a "laid" surface; conversely a rough-surfaced print on an ivory surface mount will appear much coarser than it does when viewed on a rough-faced mount. This power is often very valuable, and should weigh in selecting a texture for any particular print. Secondly, rough papers break up and scatter rather than reflect light; hence, of two equal shades of gray, that on a rough paper will appear softer and lighter than the same shade on a calendered paper.

Having noted these points, we pass to the next consideration, that of tone. The terms tone and tint are sometimes used indiscriminately, so, to prevent confusion, I may say that here the word tone is used in a similar sense to "pitch"—that is, a high tone is one approaching the light or white end of the scale of color, while a low tone belongs to the dark. Tone refers to depth—tint to color. For example, a shade of red and a shade of green might be of the same tone, but could not be of the same tint. In our experiment with the gray prints on the black-and-white mounts we saw in extreme the effect of tone in mounting. Between black and white there is a very wide range of grays, and if we add color or tint to our stock, an equally extensive range is available in each color. On the white mounts the grays appear dark and muddy, the high-lights veiled, and the dark masses unduly dense. On the black, we improve the deep grays, banish the light ones, and cast a green-brown sheen on the shadows. Clearly, we must find some medium tone if we would do the best we can for our print, and a trial or two on various shades of gray will probably give us what we require. The same method may be applied to color prints, and I show you the effect of tone on a dark green and a dark blue carbon.

The third consideration—that of tint—calls perhaps for somewhat fuller attention, as it is in this direction difficulties are most likely to arise. Let us first look at the general principle which underlies the whole question.

Every photographic print has some dominant tint or color, which varies according to the process employed in its production. Silver prints have usually the brown, brownish-purple, or purple-black tints predominating; bromide and platinum papers range through the grays; while prints in carbon, ozotype, and gum bichromate allow the photographer some limited scope in the field of bright color.

In any single print, however, there is but one ruling tint, and the proper mount

for that particular print—to be truly satisfactory—must either continue and harmonize with it, or, on the other hand, contrast with it under the laws of complementary color. To mount harmoniously is much more easy than to mount in contrast, as the principles underlying the one are less complicated than those which govern the other. In harmonious mounting the prevailing tint of the photograph should at once indicate the color to be employed, considerations of tone and texture coming after. Yet how often do we find gray prints on green or brown mounts, showing either that this principle is not recognized; that considerations of tint have been sacrificed to tone, or (and this is much more likely) that the commercial range available in that size was limited.

Now, at the present time, there is no excuse—save want of knowledge—for a continued perpetration of such mistakes. There is no dearth of material ready to hand. Several shades of so-called "crayon" paper, to be obtained from the artists' colormen, are very suitable, while from the same source the stock may be enriched with sheets of "Whatman" in various grades; Michallet, vellum, and Japanese papers. Good shades are sometimes to be picked up at the printers or papermakers in the line they call "cover papers," while many tints of homely wrapping-paper are not to be despised. In fact, there is nothing so far removed from the usual photographic sphere in papers that cannot now and again be pressed into service. You may doubtless remember the rage a year or so ago for brown-paper mounts. It was a swing of the pendulum, and like most movements started with a jerk, went too far. Brown-paper mounts were considered the salvation of every print mounted thereon, and hardly an exhibition lacked its patch of packing paper. The demand got so persistent that makers made and dealers took to stocking brown-paper mounts, and the average amateur was for the moment happy. We have got over that now, and no man did more for the general upward tendency of mounts at this stage than Mr. Percy Lund, of Bradford. His "Nature Series" of mounting papers came—if I may safely annex the phrase in Edinburgh—as "boons and blessings" to the aspiring photographer. The range in this series is extensive and open to addition, and with perhaps one or two extra tones of gray would meet all the demands we would be likely to make, till the advent of such time as color photography enables us to emulate the example of the elder arts and exhibit our productions in heavy gilt frames.

Another firm catering for the wants of the artistic mounter are the publishers of the *Photographic Art Journal*, Leicester. They issue for 1s. 6d. a sample set of papers, from which one may make a large selection, there being over eighty different grades and shades in the sample packet. The sheets size about 20 x 25 inches, and cost about twopence per sheet. Some of these papers, and all of the "Nature Series," admit of scrap mounting for portfolio use, without any backing of cardboard.*

These same stores are available for mounting in contrast; but I approach this part of the subject with diffidence, as it is delicate ground, and presupposes a knowledge of the theory of complementary color not usually possessed by every amateur. The appreciation of color effects and values is largely a matter of temperament and training, but there are certain laws that influence results whether or not we may be conscious of their working.

Briefly, it may be said that colors in juxtaposition act upon each other. For example, a white patch on a green mount will assume a reddish tinge, while if mounted on a purple it will seem tinged with yellow. The same applies to prints on strongly colored mounts—it exists, but in a subtler form, in the tertiary colors also—and the amateur may best be advised to judge by experiment. If his attempt at color contrast looks well—in the print, I mean, not the mount—then it may be successful; it will entirely depend, as does so much more in this branch of mounting, on the feeling or effect to be conveyed. But a word of warning may be given in this connection. Don't waste time hunting for color contrasts to black-and-white prints, as no color contrast to either exists. Black

* A similar series is obtainable in America from the various agencies of the Niagara Paper Co., Lockport, N. Y.

and white will contrast and harmonize with each other, and between the deep tone of the one and the high tone of the other lies the whole gamut of grays.

Having so far considered, in some of its phases, the theory of artistic mounting, let us now pass to the practice; and as example is better than precept, I may be allowed to submit to you some specimens showing the methods of applying our knowledge to our work, asking you, however, to bear in mind that it is the *method* the specimens are meant to show, not the mount, and much less the print.

We saw in casting about for the suitable tone of our gray print that a gray board fulfilled the conditions as to tone; but in some cases we may find that while its general effect may be good, it may seem to lack something to connect the print and mount and destroy the "stuck-on" appearance. This may be supplied in a variety of ways, such as the printing in of a matt, as explained; in saving a border of the original paper (if tinted), and so arriving at what is equivalent to the India tint without being, as the mountmakers say, "laid on;" or by masking a border to print white, and trimming so as to leave a narrow margin of this between print and a darker mount. Care should be taken, however, that the print is amenable to this treatment, or the border may get lost in a white sky.

Another method is to lay the print first on one tint or tone, trim to show a margin of that, and then place the whole on another tint or tone. This may even be repeated with care, showing two tones, or a combination of matted border and applied tint be used successfully. This method is much used by our American friends, and sometimes, in fact, we find this called the American method of mounting. It may be easily overdone, however. An example is given of this treatment on the lines of contrast.

But this breaking or connecting effect may be got in another way, viz., by what is known as the French method. This style, when neatly done, is very effective for delicate prints, and consists of a series of lines drawn about the print, of varying widths, at irregular intervals, with perhaps one or more of these intervals filled in with a wash of a pale tone in correct tint.

I have already spoken of the plate-mark, and acknowledged its use in breaking up the space between the impression and the edge of the margin. As we have no impression, and hence no plate-mark, to mark a mount with a blank plate or card, and then paste on a photograph, is undoubtedly trying to sail under false colors, and although few could be taken in with the deception, let us be true to our own flag. The same effect may be obtained by indents made with any stylet instrument or the edge of a paper-knife. This is very effective on a paper of good substance, such as Whatman "hot pressed."

In mounting on straw-boards, all of the foregoing methods are available; but if cut openings, either plain or bevel, be desired, a white board must be used, as the edge shows. This white edge may take the place of the white matt if the board be thick and the bevel deep; in which case, if a tint also is employed, the tint should be laid down first and the opening cut afterward. The cutting of bevel mounts is not a difficult matter, all that is required being a bevel rule with bevel about 45°, a good *flat* knife or chisel, a cutting-board or glass, and an obliging friend or a clamp. Of the latter, perhaps the clamp is to be preferred, as you can put on the screw with less compunction. Having marked the desired opening, the bevel rule is placed sufficiently back from the line to allow the knife to get *just* on it when placed on the angle, the further end clamped to the bench, board, or table, and the cut or cuts made. It is desirable that if more than one cut is made in the one line the second be a true continuation of the first, or ragged edges will result. The full effect of a matt is obtained with a deep bevel on a double or triple board, but in this case the facing paper is better laid over the bevel as well.

A word about the size of the mount in relation to that of the print. Small prints require relatively larger mounts than large prints, therefore it follows that the larger the print the smaller relatively the mount, till in large sizes the mount may be dispensed with altogether. If the mount be too large, it dwarfs the print.

By J. C. STRAUSS, St. Louis

By S. H. LIFSHEY, Brooklyn, N. Y.

By C. A. KRAUSCH, Pasadena, Cal.

By GEORGE HABERNICHT, San Francisco

By L. H. CROSIER, Readsboro, Vt.

By L. H. CROSIER, Readsboro, Vt.

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By S. H. LIFSHEY, Brooklyn, N. Y.

By S. H. LIFSHEY, Brooklyn, N. Y.

By C A KRAUSCH, Pasadena, Cal.

By GEORGE STECKEL, Los Angeles

By S. H. LIFSHEY, Brooklyn, N. Y.

By H. RANDALL, Ann Arbor, Mich.
I. BENT, Operator

By S. H. LIFSHEY, Brooklyn, N. Y.

ABOUT COLORING PHOTOGRAPHS.

THERE are not wanting signs of a revival in the popularity of colored photographs. According to the methods used in some of our best studios, the colored photograph of to-day is vastly different from the tinted portrait of a few years ago. The crude color-finishing of earlier years could not appeal to the cultured patron. It was too bold and harsh in its coloring, the product generally of colorists who knew little and cared less about the color-sense and the agreeable harmony of colors. The modern colorist first perfects his practical knowledge of these essentials before attempting the more difficult work of applying color to the photographic print. According to modern methods, also, much stress is laid upon the choice of a print adapted for coloring. Hence, the colored photographs of to-day are usually platinotypes, especially printed for the colorist and vignetted so that the details of the photograph, both in the figure and its accessories, are suggested rather than printed to their full depth. Upon such a print the skilled colorist can apply his colors with a reasonable chance of success, striving to imitate the delicacy of the water-color sketch in his effects, rather than to produce a fully painted picture in solid color. Such colored photographs, as we see them displayed by portraitists such as Falk, Hollinger, Marceau and others, bring prices as high as $50 for a cabinet portrait, and are a profitable specialty for studios appealing to high-class trade.

The lack of a concise but practical guide to photographic coloring has hitherto prevented many photographers from venturing into this field. There is need for a new school of photographic colorists trained in modern methods. We are glad to mention, as a help in this work, the publication of *The Photo-Miniature*, No. 44, devoted entirely to "Coloring Photographs." It is a very useful little manual, written by an experienced colorist, and will help those interested to get an intelligent grasp of the field and its possibilities. The following extract from this handbook is worthy of careful reading as bearing directly on the first essential, viz., a knowledge of the charm of color.

The charm of color is irresistible, existing in all times and among all sorts and conditions of men since the beginning of the world. No writer who has described this charm so happily as the late Mr. Rood, in his *Modern Chromatics*. He says: "The power to perceive color is one of the most indispensable endowments of our race; deprived of its possession, we should be able not only to exist, but even to attain a high state of intellectual and æsthetic cultivation. Eyes gifted merely with a sense for light and shade would answer quite well for most practical purposes, and they would still reveal to us in the material universe an amount of beauty far transcending our capacity for reception. But over and above this we have received yet one more gift, something not quite necessary, a benediction as it were, in our sense for and enjoyment of color. It is hardly fair to say that without this gift nature would have appeared to us cold and bare; still we should have lost the enjoyment of the vast variety of pleasant and refined sensations produced by color as such and by color combinations; the magical drapery which is thus cast over the visible world would have given place merely to the simpler and more logical gradations of light and shade.

"The love of color is part of our constitution as much as our love for music; it develops itself early in childhood, and we see it exhibited by savage as well as cultivated races. We find the love of color manifesting and making itself felt in the strangest places; even the profound mathematicians are never weary of studying the colors of polarized light, and there can be no doubt that the attractive power of color has contributed to swell the mathematical literature of this subject. The solar spectrum was for many years before the discoveries of Kirchoff and Bunsen a favorite, almost a beloved subject of study with physicists; the great reward of this devotion was withheld for nearly half a century; divested of its color charm, attracting less

study, the spectrum might have remained an enigma for another hundred years.

"Color is less important than form, but casts over it a peculiar charm. If form is wrong, seen or falsely represented, we feel as if 'the foundations are shaken;' if the color is bad, we are simply disgusted. Color does not assist in developing form; it ornaments and at the same time slightly disguises it. We are content to miss some of the modelling of a beautiful face for the sake of the color-gradations which adorn and enliven it.

"One of the most important characteristics of color in nature is the endless, almost infinite gradations which always accompany it. It is impossible to escape from the delicate changes which the color of all natural objects undergoes, owing to the way the light strikes them, without taking all the precautions necessary for an experiment in a physical laboratory. Even if the surface employed be flat and white, still some portions of it are sure to be more highly illuminated than others, and hence to appear a little more yellowish or less grayish; and, beside this source of change, it is receiving colored light from all colored objects near it, and reflecting it variously from its different portions. If a painter represents a sheet of paper in a picture by a uniform white or gray patch, it will seem quite wrong, and cannot be made to look right till it is covered by delicate gradations of light and shade and color. We are in the habit of thinking of a sheet of paper as being quite uniform in tint, and yet instantly reject as insufficient such a representation of it. In this matter our unconscious education is enormously in advance of our conscious; our memory of sensations is immense, our recollection of the causes that produce them utterly insignificant; and we do not remember the causes mainly because we never knew them.

"These ever-present gentle changes of color in all natural objects give to the mind a sense of the richness and vastness of the resources of nature; there is always something more to see, some new evanescent series of delicate tints to trace; and even where there is no conscious study of color, it still produces its effect on the mind of the beholder, giving him a sense of the fulness of nature and a dim perception of the infinite series of delicate changes by which she constantly varies the aspects of the commonest objects. This orderly succession of tints gently blending into one another is one of the greatest sources of beauty that we are acquainted with, and the best artists constantly strive to introduce more and more of this element into their works, relying for their triumphs far more on gradations than on contrasts."

Speaking of gradations of colors, Ruskin says: "You will find in practice that brilliancy of hue and vigor of light, and even the aspect of transparency in shade, are essentially dependent on this character alone; hardness, coldness, and opacity resulting far more from equality of color than from nature of color." At another time, giving advice to a beginner, he says: "It does not matter how small the touch of color may be, though not larger than the smallest pin's head, if one part of it is not darker than the rest, it is a bad touch; for it is not merely because the natural fact is so that your colors should be gradated; the preciousness and pleasantness of color depends more on this than on any other of its qualities, for gradation is to color what curvature is to lines, both being felt to be beautiful by the pure instincts of every human mind, and both, considered as types, expressing the law of gradual change and progress in the human soul itself. What the difference is in mere beauty between a gradated and ungradated color may be seen easily by laying an even tint of rose-color on paper and putting a rose-leaf beside it. The victorious beauty of the rose as compared with other flowers depends wholly on the delicacy and quantity of its color gradations, all other flowers being either less rich in gradations, not having as many folds of leaf, or less tender, being patched and veined instead of flushed."

A process for producing photographs in color on paper, said to be practical and inexpensive, has been introduced by Mr. E. Sanger Shepherd, of London. Mr. Shepherd has an established record in color photography, and great things are expected from his announcement. We will see that our readers are informed in this matter.

PICTORIAL PORTRAITURE.

The Kind That Brings Business.

BY CHARLES P. MARSHALL.

No man can hit a mark without aiming at it; and skill is acquired by repeated attempts.

How eagerly the leaves of every new number of the magazines and journals, literary and photographic, are opened to feast the eye on the pictures! How quickly even the small-town photographers of limited advantages and experience pick out the pictorial gems. And how often they say in desparing words: "Oh! I wish I could make pictures like these!"

Do they stop to think that these pictures cost their makers much study and practice? Do they consider that the makers of these pictures laid more stress on art principles than on materials? Do they realize that the application of these same art principles results in what are called pictorial qualities—qualities that command higher prices and afford an entry to a more cultured article of buyers?

Do they know that these artists long ago realized that they must constantly aim at the mark of quality if they wish to hit it; and that each attempt gave them more skill? They didn't look only a few inches ahead and say: "I am perfectly satisfied with my work, it is good enough." They remembered the old saying: "Good enough is good for nothing."

They wasted no time in conceit, but kept on aiming at the mark, and finally hit it; scored a bull's eye, and went on record as successful artists. Their work, too, was neither prettiness nor popularity. It was pictorial qualities and good composition, worked out through their individuality.

Would Washington have hit the mark had he said to his men: "It is pretty cold here at Valley Forge, you may pull the priming from your guns, and we'll go home where the back-logs blaze; next spring, perhaps, the enemy will abandon the cause." No, he stayed and suffered with his soldiers, maintained his position and aimed at the mark of freedom with the flint-lock of determination. He hit it, too, else you and I would not to-day be enjoying the privileges of American citizenship.

Enthusiastic Edison never hit the mark by curling up by his laboratory stove, dreaming and hoping, as some do, that something would turn up and become a talking-machine. No, he made copper and carbon, wood, chemicals, and rubber, until they talked back to him. Night and day he held the bow of persistency and the arrow of penetration right on the target. Did he hit it? The echo "yes" comes from thousands and thousands of homes enjoying the pleasures of the phonograph.

John Wanamaker is another good shot. His skill didn't come, either, by bobbing on the banks of the Schuylkill looking for bullheads. He studied calico and tape, dress-goods, and how to please his customers. He aimed often and scored early; and the mark he hit is visible to any eye that looks down the busiest part of Broadway.

Take off your hat to Napoleon Sarony, who scored a great success by cutting loose from the same old positions and traps used by every other photographer. He studied art, learned pictorial effects and incorporated them in his portraiture. With unerring aim he landed square in the middle of the mark, and for years to come the world will applaud his inimitable skill.

Here's another: Elbert Hubbard, of Roycroft fame, who chose for his target the highest plane of bookmaking. He studied it deep in every part, and aimed to produce beautiful books that looked entirely different from some others. He pinned his faith on his individuality, and won; never losing sight of the mark. And now he knows, and so do thousands of book lovers, he hit the mark.

E. B. Core is another man who hit it when he concentrated his efforts on children's portraits.

Hollinger hit it hard when he gave his originality full swing and abandoned the

use of commercial cards, stereotyped positions, and lightings. If you doubt it, go to New York and sit to him for a portrait. He will charge you five dollars for the first copy, three dollars and fifty cents for each duplicate print. This came by his aiming often at the mark, not by wasting his precious time dabbling in all the popular formulas, accessories, mounts, etc.

Hollinger is unique; his originality stands out strong, he has a hold on a class of customers that appreciate his masterly productions and are willing to pay his price.

We have one Hollinger, and he is a good one. It's all we need; a duplicate of this master would kill the individuality of each. Still, regardless of this fact, some photographers are making their life miserable trying to make their portraits indistinguishable from real Hollingers.

What folly! Their own individuality will grow just as strong, perhaps, as Hollinger's if they but give it a chance.

Copy Hollinger's *method of observation*, of studying things (lights, shades and expressions) outside of simple photographic craftsmanship. His pictures have pictorial qualities. So will yours if you take a firm stand and ask art to aid you. Remember, too, it isn't necessary to leave your present field and rush to a big city; because even in a small place you can develop a higher class of trade. You will find plenty of patrons for pictorial photography if you learn how to do it and show your skill. Then, when you have outgrown your little field and your ambition is at white heat, go to a larger town. But that point is easily solved. When you have incorporated your individuality in your portraits, when you understand how to make real pictures —pictures with *pictorial qualities*.

Don't forget that each day more clearly defines the field of the specialist. Not only the broad field of specialists in children's pictures, men's pictures, women's pictures, etc.; but the field of individuality is the high plane you must strive for. Supposing it does start the perspiration and make you think hard, isn't the prize worth winning? To rest you know is to rust; and "*no man can hit a mark without aiming at it; and skill is acquired in repeated attempts.*"

HOW TO DEVELOP FAINTLY PRINTED PRINTS UPON GELATINO-CHLORIDE PAPERS.

[From the British Journal of Photography Almanac for 1903.]

BY J. T. HACKETT.

AFTER making many experiments last winter, in order to discover a reliable method of developing faintly printed-out papers *without staining them*, I came to the conclusion that the following formula and method of working came as near perfection as could be wished:

The brands of paper I have experimented with most were Kodak's "Solio" P. O. P., "Paget Prize" P. O. P., and "Marion's Mariona" P. O. P., all of which yielded good results in my hands. But I believe that it will be possible to develop P. O. P. of any brand by following the directions given; provided it is rich in silver chloride, or the chloride of silver water with which the developer is mixed is strong enough in chloride of silver.

The stronger the water employed for mixing the developer with is in chloride of silver, the more rapid the development will be. The chloride of silver water should be nearly if not quite *as opaque as new milk* before being mixed with the concentrated developer; it will then develop quickly.

As the winter, with its dark weather for printing, will soon be upon us, I thought that an article upon this subject would be acceptable to many of the thousands of the readers of this popular annual who still like P. O. P. prints.

In order to ensure success, *distilled water* (or water purified by being boiled and filtered before use) should be employed for all the solutions, and the various washings up to and including toning of the prints, after which the water from the

main, well, or butt, usually used with success when printed-out pictures are being finished, may be employed instead. Pure distilled water is, of course, the safest and the best to use, and a very convenient way of buying it is, perhaps, in the solid state —*i. e.*, ice. The kind of ice I refer to is that which is guaranteed to be made from pure distilled water.

For convenience of reference I have arranged, as far as possible, each operation and solution used, under their respective headings.

1. *The Paper.* The packets of paper containing the cut sizes are the most convenient to buy and use for this method of printing, because they are more likely to contain fresher paper than the tubes of paper sometimes do; especially is this the case when it has to be bought in villages or small towns, as the sale of the former is likely to be much larger than the latter. And the paper being packed flat is much more handy to use, or to cut to a smaller size, than if cut up from rolls of paper by the photographer himself. The slight extra cost of the packets of paper is made up in other ways.

2. *Printing.* The printing need not take more than from one-tenth to one-twentieth (and often less) as long as printing right out would take. Print until the image shows faint detail in all but the highest lights, as much time is thus saved in printing, and over-development is more easily avoided. Deeper printing than the above is quite unnecessary, but it can be carried on much further if desired.

3. *Artificial Light.* It will be safer to fill the printing frames and to inspect the progress of the printing by *artificial light, a candle or paraffin lamp* being the best to use, although it can be done (with care) by very subdued daylight. *But the development must never be attempted* in a light or greater actinic power than that indicated above, or fogged and stained prints are sure to be produced.

4. *Chloride of Silver Water.*—As previously mentioned, it is necessary to mix the developer with chloride of silver water, otherwise development of the faintly printed image cannot take place. The chloride of silver water should be made by artificial light in the following manner: The untrimmed prints to be developed are soaked for thirty minutes or longer *in distilled or other purified water* (moving them about all the time, as in toning), so as to extract all the chloride of silver from them that is possible; then pour this water off into a clean Winchester quart bottle, or some large glass receptacle, and apply a similar quantity of clean purified water to the prints, and proceed as indicated above, so as to extract as much more silver chloride from them as you can, and pour this into a clean bottle of similar size to the first one named; label the first bottle A and the second bottle B, writing under each letter *chloride of silver water* for developing P. O. P. prints. They must both be protected from actinic light by pasting brown or other non-actinic paper round them up to their necks (unless the bottles are made of non-actinic glass), and by keeping them in the dark room, in order to protect their contents from actinic light as much as possible; *otherwise it may cause the pictures to be fogged or stained during development.* As a guide, I may say that eight ounces *of water* will be a suitable quantity for washing the chloride of silver out of two prints 8½ x 6½ inches; four, 6½ x 4¾ inches; or eight prints, 5 x 4 inches, or 4¼ x 3¼ inches, if used in dishes suitable for the size of the prints to be washed, but the smaller the quantity of water it is possible to use, the better, because it will then be stronger in chloride of silver, which will be a *great advantage, because it is to be used to dilute the concentrated developer with, and the more chloride of silver there is in it, the quicker it will develop.* It is a good plan to wash any printed-out prints with as much care as to the quantity of water employed as if they were going to be developed; the chloride of silver water thus obtained is to be kept in a clean bottle, to be used for mixing the developer with, for developing the faintly printed prints with. Pour the first wash water into the bottle labelled A, and the second wash water into the bottle labelled B. In fact, if printed-out prints are trimmed before toning (as they should be, in order to save waste of gold), and the trimmings added to bottle B, the chloride of silver they contain will help to strengthen it in

the latter. After the bottles have been standing for some days, most of the chloride of silver will have settled somewhat, and is consequently much more concentrated near the bottom of the bottle; so about one-third of the water it contains can be carefully poured off and put into the residue tub or thrown away. By this means a much more concentrated solution (if it can be called a solution) of chloride of silver is obtained than would be otherwise possible. When required for mixing the developer with, the bottle is well shaken, so as to equalize the strength of the contents as much as possible, and then the necessary quantity is poured into a clean glass measure; it is then poured into a clean glass dish, or a white celluloid or porcelain or other suitable developing dish (I much prefer the former, because I find that the chloride of silver the developer contains acts upon the glaze of the porcelain, causing it to crack, and stains them, and the latter in turn often stain the prints during development). Then pour the required quantity of the concentrated developer into the glass measure, and then pour the chloride of silver water from the developing dish into the glass measure, and then return the mixture to the developing dish, and the developer is ready for use. This way of mixing the developer produces a clearer solution than the reverse way of mixing it would have done. *But before developing the prints they must be immersed in an acid bath and well washed* (*see below, paragraph* No. 5). After the prints to be developed have had the bulk of the chloride of silver extracted from them as described above, *they are well, but quickly washed in four to six changes of clean, pure water;* all of which can be kept in bottles for future use, as first and second wash-waters for other batches of prints. By this method of working there is no waste of distilled or other purified water.

5. *Acid Bath.* The prints that are to be developed are now soaked in an acid bath, or a combined acid, salt, and alum bath, in order to thoroughly clean the prints of all the stain or fog-producing substances that they contain, *thus preventing them from being stained during development.* But if they should sometimes get slightly stained during unusually long development, it (the stain) is generally invisible after the pictures have been fixed and washed; but if a slight stain should still remain, the cyanide of potassium bath, given further on, will remove it.

For convenience of working, mix up one or the other of the three concentrated solutions given below:

D.

Water	18 oz.
Hydrochloric Acid—pure	2 "

E.

Water	18 oz.
Chloride of Sodium	2 "
Hydrochloric Acid—pure	2 "

F.

Water	18 oz.
Chloride of Sodium	2 "
Potash Alum	2 "
Hydrochloric Acid—pure	2 "

For use, take of D, E, or F	½ "
Water (pure)	6 to 8 "

If the weather is hot, or the film of the P. O. P. tends to soften, blister, or frill in the acid bath made from the D solution, try to use ten or twelve ounces of water, or even more, instead of the six to eight ounces given, or make the bath from the E or F solution instead, which should prevent any possible chance of frilling, etc. Soak the well-washed faintly-printed prints from five to twenty minutes in the above diluted acid bath (but ten minutes is generally quite long enough), moving them about, as in toning, the whole time, so as to enable the solutions to act on all parts of them thoroughly. The solution is now poured off and thrown away, and the prints washed in at least four waters, so as to free them from the acid, salt, and alum, and from any soluble impurities they may contain. They are now ready to be developed.

6. *Developers and Developing.* I have had more success at present with acid developers than with either neutral or alkaline developers, and found the two following concentrated developers work well when diluted with chloride of silver water to the necessary extent:

Concentrated Acid Hydroquinone Developer.

Water (distilled)	6 oz.
Gum Arabic (powdered)	60 gr.
Citric Acid	30 gr.
Acetate of Soda	½ to 1 oz.
Hydroquinone	60 gr.

First dissolve the gum Arabic in two ounces of hot distilled water, then add four ounces of cold distilled water, and then dissolve the citric acid and the other chemicals in the order given.

The above solution *works best when freshly mixed*, but if not more than eight days old it will (when diluted as directed below) produce a developer that does not stain the film or the paper of the print, but stains very badly if it is much older. The above developer works well without the gum Arabic, but if the latter is present it usually renders staining almost impossible, but if the prints should be slightly stained, the presence of the gum arabic in the developer renders it much easier to wash it out during the other operations than if gum Arabic had not been used. More or less gum Arabic than is indicated in either developer can be used if found necessary. If thought convenient, the above concentrated solution could be mixed up in larger quantities than indicated, *but without the hydroquinone*, which could be added dry, just before use, in which case it would keep in good working order for at least one month probably. I do not advise more than four prints to be developed at the same time until the worker has had considerable practice. *The temperature of the room* in which development takes place should not be under 60° F., and need not be higher than 70° F. If it is much below 60° F. the development is likely to take a long time, and this tends to produce stained prints. But any time up to two hours inclusive should produce stainless prints, but from four to fifteen minutes is about the time it usually takes to develop with the acid hydroquinone developer when freshly mixed, but acid ortol and some other developers may develop more quickly. When a very quick acting developer is employed, not more than two prints should be developed at the same time, otherwise a great many will be spoiled through being over-developed.

To develop two prints, 8½ x 6½ inches, or four prints, 6½ x 4¾ inches, or eight prints, 5 x 4 inches, or 4½ x 3¼ inches, twelve ounces of developer should be ample, and possibly more could be developed in it than is stated, but the last few prints will take much longer to develop than the first prints did. A whole plate or 10 x 8 inch dish will be a suitable size to use for twelve ounces of developer.

To develop take:

Concentrated Acid Hydroquinone Developer	1 to 2 oz.
Chloride of Silver Water	10 "

When freshly mixed, it will develop in fifteen minutes or less, without staining the film or the paper of the print.

Concentrated Acid Ortol Developer.

Water (distilled)	6 oz.
Gum Arabic (powdered)	90 gr.
Metabisulphite of Potash	30 "
Ortol (Hauff's)	90 "

Mix in the same manner as indicated for the hydroquinone developer. The above developer also works much cleaner when freshly mixed.

To develop, take

Concentrated Acid Ortol Developer	1 to 2 dr.
Chloride of Silver Water	6 oz.

At least one print, 8½ x 6½ inches; two prints, 6½ x 4¾ inches; or four prints, 5 x 4 inches or 4¼ x 3¼ inches, can be developed in the above quantity of developer. The development takes place very quickly, the average time being from three to ten minutes. The strength of the developer (and the time it is allowed to act) must be varied to obtain the amount of contrast desired in the prints. Prints from thin flat negatives may require stronger developers than those given, *in order to increase their contrasts*, for which the following developers may be tried:

Concentrated Acid Hydroquinone Developer	2 oz.
Chloride of Silver Water	6 to 8 "

or

Concentrated Acid Ortol Developer	2 dr.
Chloride of Silver Water	6 oz.

But prints from negatives having excessive contrasts, it will be better to develop them with a weaker developer, *so as to reduce their contrasts*, for which one of the following developers may give the desired results:

Concentrated Acid Hydroquinone Developer	1 oz.
Chloride of Silver Water	5 to 6 oz.

or

Concentrated Acid Ortol Developer	1 dr.
Chloride of Silver Water	6 oz.

Of course, the foregoing developers are only intended as a guide, and each worker must vary their strength until he obtains the effects he desires in his prints. Care must be taken not to over-develop, and for this reason it is best to work with rather weak than strong developers, as they act slower, and are consequently more under control. *The speed of development and the density is affected more by the quantity of chloride of silver that is present in the developer* than the quantity of the developing agent it contains. In fact, the *chloride of silver* in the developer *is the accelerator* in the foregoing acid developers (for development cannot and will not take place without it is present in sufficient quantity), while the citric acid and acetate of soda (or metabisulphite of potash, as the case may be) act as restrainers of fog, while the gum Arabic or fish glue (*i. e.*—isinglass), when present, act as stain preventers and restrainers as well.

When the development is completed, wash the prints as rapidly as possible in at least two to four clean waters, and then immerse them for from five to ten minutes or longer in the following bath :

Take of Concentrated D, E, or F solution	½ oz.
Water (pure)	6 to 8 oz.

The prints are moved about (as in toning) all the time they are in this bath, the object of which is to remove or destroy the last traces of the developer, as well as any slight stains there may be, after which they must be well washed in clean water, in order to free them from acid and any soluble impurities the film or paper may contain. They are now ready for toning, and if the developer, acid, etc., has been thoroughly removed from them they will tone as quickly and as well as if they had been printed out and treated in the ordinary way.

Any of the toning baths usually employed for P. O. P, should work well, but I have used the following formula with great success for the last four or five years at least for both printed-out and developed P. O. P. prints.

I copied the formula from the *Photographic News* of September 25, 1896, page 620, viz.:

Stock Solution.

Sodium Acetate	1 oz.
Sodium Bicarbonate	1 dr.
Water (distilled)	15 oz.

The above keeps in good working order for at least twelve months.

To make the toning bath, take one ounce of the stock solution, eight ounces of distilled water, and one grain of chloride of gold. After toning well, wash as usual, and fix for fifteen minutes in hyposulphite of soda, two ounces to four ounces ; water, twenty ounces. I use the latter strength unless it causes frilling, in which case I use it weaker, as indicated. Well wash as usual after fixing.

If any of the prints are stained slightly, or require reducing, the following solution will do it :

Cyanide of Potassium	6 gr.
Ten per cent. Solution of Liquid Ammonia	1 dr.
Water (distilled)	20 oz.

The stains, if any, will disappear in about five minutes, and slight reduction may take place also, but a much longer immersion than this will be necessary if very much reduction is required. If distilled or purified water is not used for all the foregoing solutions and for all the different washings up to toning, success need not be expected, as I have found that when the prints get stained, the cause is usually to be traced to some impurity contained in the water employed for mixing the solutions or for washing the prints with. Unless some mistake has been made in mixing or using one or more of the solutions employed impure water is usually the cause of failure, but non-success may be due to insufficient washing before or after developing, or both.

The Point of Interest in Picture Making. The photographer, like the painter, may focus where he pleases, but that point, remember, becomes the centre of interest. In many of the Dutch paintings, which must be the cynosure for every photographer of genre, we see that the point of interest is well defined and all the lines of the picture intentionally conduct the eye to the spot of convergence. Understand the converging point of interest is not necessarily the centre of the picture—indeed, in the majority of cases it had better not be.

DEATH OF MR. JEX BARDWELL.

We record with sorrow the death of the veteran photographer Jex Bardwell, which took place at Detroit, December 14th. Since the death of his devoted wife, a few years ago, Mr. Bardwell had steadily declined in health, and the end was not unexpected.

Born in Wood Street, off Cheapside, London, in 1824, Mr. Bardwell's earliest memories recalled the stirring days of the "last of the Georges" and King William IV., prior to the accession of the late Queen Victoria. He came to America in 1834, and the family located in Michigan, near the city of Ann Arbor. Returning to England to finish his schooling (at Halesworth, Suffolk), in 1841 Mr. Bardwell saw and handled some of the first Daguerreotypes made, it is said, by Daguerre, from which dates his acquaintance with photography. In 1844 he came back to this country, and learned the trade of brewing and distilling, but his father's death necessitated another visit to England in 1845, during which visit he took lessons in photography from a Mr. Egerton, whose studio was located in the Fleet. Mr. Egerton at that time practised the Calotype (or Talbotype) process, and made a specialty of life-size bust portraits. The mysteries of Daguerreotypy were made plain to Mr. Bardwell at the old Royal Polytechnic School, in Regent Street, about the same time.

The year 1849 found Mr. Bardwell in Michigan again, facing the stern realities of life. The collection of a debt of $50 put into his hands a Daguerreotype outfit, and forthwith Jex Bardwell took up the practice of photography as his profession. Always a thorough believer in the value of photographic literature, he read as he worked, and in a few years had charge of a prominent Daguerreotype gallery in St. Paul, Minn. Returning to Detroit in 1853, the "dry" processes absorbed his attention, and his practical knowledge of the evolution of the photographic plate was probably larger than that possessed by any photographer in America to-day. In 1866 the famous "bromide patent" litigation vexed photographers everywhere, and Mr. Bardwell's extensive knowledge of the early methods was the means of enabling the fraternity to overcome the grievous burden of that patent. For this important service, which relieved American photographers from a direct tax of hundreds of thousands of dollars, Mr. Bardwell received no reward and little appreciation. He also gave valuable help in fighting the "silver saving" monopoly, which later threatened the fraternity.

Apart from his professional work, Mr. Bardwell was a keen enthusiast in stereoscopic aud lantern photography. His interest in the optical lantern dated back to the early fifties, and in 1851 he gave a series of lantern exhibitions, covering a whole week, in Detroit, this being one of the first demonstrations of the possibilities of the optical lantern in that city.

During his long and busy life Mr. Bardwell was a prolific writer and speaker on photographic subjects, always ready to experiment with new material and apparatus, and equally ready to share his knowledge and experience with his fellow workers. It is sad to know that the last few years of his life were passed in the narrow ways of poverty, a condition in part due to his generosity to his fellows in earlier days. Many appeals were made to the fraternity during late years to provide a home for Mr. Bardwell's old age, but without effect.

The matter was vigorously presented at several conventions, and subscription lists were opened by the various photographic journals—not as a matter of charity, but in recognition of the yeoman service rendered to American professional photography by Mr. Bardwell in days past. But in vain. The net result was a sum sufficient to purchase a plot in a Detroit cemetery, wherein Mrs. Bardwell was buried; where, as the dear old man said, his "wife kept house awaiting his coming"—and a pittance of $10 a month doled out "while it lasted." Let us hope that the veteran passed away 'ere the dole ended—to a home not built with hands and to a reward which cannot be taken away from him.

A METHOD OF PRODUCING PHOTOGRAPHS IN COLORS.

THE success which has attended Mr. Sanger Shepherd's process for producing photographs in colors on glass by means of superimposing stained films, gave great interest to Mr. Shepherd's announcement a few weeks ago that he would soon have ready a method of producing photographs in colors on paper. The promised demonstration was given a week ago at the London Camera Club, and one who was present sends us the following description of the method. We are glad to be the first to present particulars of this important advance to American photographers:

An Outline of the Process.

To understand of what Mr. Sanger Shepherd's process consists, it is well to pass in review the process of color photography as hitherto practised—I am talking about the trichromatic method, by which, up to the present time, only color photographs in the form of transparencies can be made. Prints on paper there have been, it is true, but only by processes far in excess of the skill and time which the amateur photographer can apply. In making a photograph in colors, the first requirement is a set of three negatives recording the color sensations of the original object. These, no doubt, most of my readers are aware, are taken through red, green, and blue-violet screens upon a plate which is sensitive to all parts of the spectrum, such as the Cadett spectrum plate. Suppose we have got the negatives: we have now to make from them positives in colors, the colors being the complementaries of those which we have used in taking the negatives. Thus the negative from the red screen is made to give a blue positive, that from the green screen a red positive, and that from the blue-violet screen a yellow positive. The manner of making these positives for use as a transparency has been as follows: From each negative a print was made upon celluloid film sensitized with potassium bichromate. This film was exposed, celluloid side in contact with the negative, and, as workers of the carbon process know, the effect is to give a relief in gelatine on developing the print in hot water. Of course, as the print is exposed celluloid side to the negative, the soluble parts of the gelatine film are outside, and there is, therefore, no necessity to transfer the film as there is in carbon printing. These three gelatine reliefs, which are practically invisible when finished, are stained in the blue, yellow, or crimson dye, the gelatine taking up an amount of the dye proportional to the amount of relief. All that then remains is to cement these three films one on the top of the other in register, and to bind the whole together between a couple of lantern-slide cover-glasses. The process, which has been carried to a stage of great perfection, is that known as the Sanger Shepherd process for transparencies. For making the blue component Mr. Sanger Shepherd, however, uses an ordinary lantern-plate tone to a clear Prussian blue. The main difference between this method and that known by the name of Lumière is, that in the latter process mica instead of celluloid films are used, and the blue positive is produced in the same manner as the other two—*i. e.*, by means of a dye.

The Process on Paper.

Now when this process is applied to paper the worker is confronted with many great difficulties. The stretching and expansion of paper in different states of dampness is the chief of these, and makes it extremely difficult to obtain an exact register of one print upon the other. Methods of rendering paper non-expansible have been applied; but, although a great deal of work has been done, very little success has been obtained from a practical point of view. Moreover, the regulation of the different colors of the component pictures has been extremely difficult, whereas, in the new process, the adjustment of one color to suit the others is a matter of the greatest ease. But the chief and distinguishing advance in the Sanger Shepherd process upon paper is that, once the three gelatine reliefs above described have been prepared, there is no necessity to invoke the aid of light in preparing any number of color prints. The

remainder of the process is what we may call photo-mechanical—*i. e.*, prints are taken off without the aid of light. This is done in an extraordinarily simple and beautiful manner. The method, it appears, was first lighted upon purely by accident. Attempts were being made to superimpose the colored monochrome reliefs upon a piece of bromide paper, the celluloid bearing the stained gelatine picture being laid upon a piece of bromide paper and the celluloid backing stripped off, leaving the film of stained gelatine upon the bromide paper support. It was found in this experiment that the dye entirely left the relief which previously held it, and transferred itself to the film of softer gelatine with which it was placed in contact. That gave a clue to the new process, which, expressed in a few words, is as follows: A piece of paper coated with a film of plain gelatine is made thoroughly wet, the gelatine relief is stained in the usual manner with its appropriate dye, crimson, blue, or yellow, as the case may be, and when wet is squeegeed down upon the sheet of gelatine-coated paper. The two are allowed to remain for a quarter of an hour or twenty minutes, and when the relief is removed the whole of the colored image has passed out of the relief which previously held it and has fixed upon film of softer gelatine. Then, without further loss of time, the second relief is applied in like manner, and then the third, the three images being superimposed one upon the other without difficulty. As the paper is in the same state of wetness throughout this comparatively short exposure, the difficulty of expansion is done away with, and all that remains is to dry the resulting trichromatic print and mount it. The three gelatine reliefs can be re-dyed and used over and over again to the number, at any rate, of twenty or more, the only difference being that the reliefs part with their dye somewhat more slowly as they are used. Such was the process demonstrated by Mr. Shepherd, and there is no doubt that the method constitutes an entirely new departure, not only in tricolor photography, but in pure monochrome photography as well. The print may be made in gelatine relief, and monochromes printed off from it without the aid of light to a limited number and in any color. Here is a new process of which the experimenter can make indefinitely varied use.

This color process upon paper is not put forward until it has passed the experimental stage. Mr. Sanger Shepherd has had it in hand since April last, so that the worker who takes it up may be reasonably sure that the practical difficulties have been surmounted. There is the question of cost, and though no prices have been published as to that, I believe that anyone may fully equip himself for starting to work with an expenditure of not more than two pounds ($10.)

Those desiring further information can doubtless obtain it from Mr. Sanger Shepherd, Gray's Inn Passage, Red Lion, St. Holborn, London.

VOIGTLANDER AND I.

NOT for years has the American photographer so thoroughly shown his appreciation of a good book as he has in the case of *Voigtländer and I.* The book was published just before the holidays, and already the large edition printed has dwindled to a few hundred copies. We are proud of the book's success. It is worthy of all the appreciation given to it. It tells the story of a life which deserves appreciation; the life and adventures of one of America's foremost photographers, his early struggles, his ideals, and their realization. It abounds in stories which amuse by their revelation of human nature. It has its touches of pathos. Its illustrations cover the whole gamut of life and its incidents and accidents. Mr. James F. Ryder has given to our literature a contribution of permanent value.

By the author's courtesy we give a few excerpts from his mail-bag concerning the book. They will interest our readers and show how the book impresses those who have seen it. First, a word from President Roosevelt:

[COPY.]

Personal. WHITE HOUSE,
WASHINGTON, Nov. 6, 1902.

MY DEAR SIR:

The President is in receipt of the copy of your book which you were good enough to send him recently, and requests me to thank you for your thoughtful courtesy. He wishes me to say that he will be interested in looking through the volume at a leisure moment. Very truly yours,

(Signed) GEO. B. CORTELYOU,
Secretary to the President.

MR. JAMES F. RYDER,
Cleveland, Ohio.

The following letter comes from the Secretary of State:

[COPY.]

DEPARTMENT OF STATE,
WASHINGTON, Nov. 17, 1902.

DEAR MR. RYDER:

I have received your kind letter of the 12th of November and the accompanying book, *Voigtländer and I.* I have had much pleasure in looking at the remarkable photographs it contains, and shall take an early opportunity to enjoy the text.

I am, with many thanks,
Sincerely yours,
(Signed) JOHN HAY.

Mr. Morris Burke Parkinson writes from Boston:

Nov. 26, 1902.

DEAR MR. RYDER:

Inclosed find check for $2.75 in payment for your good *Voigtländer and I.* The extra quarter is to cover cost of cashing check, sending bills, etc., which is no more than right.

It has seldom given me more pleasure to pay a bill than I take in drawing this check. I have glanced at the book enough to know that I shall be highly entertained and instructed. It will always be a pleasant memory to me that I had the pleasure of meeting you personally, though I had known you by public repute for years. And your good wife and your brother and his wife—I can see you all now—sitting at the dinner-table in Buffalo. Perhaps you cannot all sing, but certainly you are a quartette from which comes the sweet music of domestic peace. If your declining years are as full of honor and comfort as your life has been of merit, it will be no more than is desired by your friend,

MORRIS BURKE PARKINSON.

Here is Mr. Ryder's characteristic reply to the above:

CLEVELAND, O., Nov. 29, 1902.

MORRIS BURKE PARKINSON, Boston, Mass.

DEAR MR. PARKINSON: I have received your letter of the 26th and your check for $2.75, being 25c. above the regular price, showing *V. and I.* at a premium. I thank you for this, and mark with pleasure that it was *you* who first declared it above par.

Money is a fine thing to receive, but in this case it takes second place to the valued words of your letter.

You have made me very happy, and I do sincerely thank you. Very truly yours,

JAMES F. RYDER.

The *Chicago Record-Herald*, in a review extending over several columns, says: "The veteran photographer, James F. Ryder, of Cleveland, Ohio, has written a book of reminiscences—an uncommonly interesting book, full of original anecdotes and choice pictures. He calls it *Voigtländer and I in Pursuit of Shadow Catching*, and in a clever preface it leaks out that his truthful and beloved friend, Voigtländer, is his camera. Well may Mr. Ryder extol the merits of this faithful companion, for his camera has brought him wealth, reputation, and troops of friends. President Garfield once referred to him in a public speech as the most successful photographer in the United States.

"The volume is well written, and abounds in interest of various kinds. Its author's very original personality pervades the whole. It is generously illustrated with half-tone reproductions of many of the most curious and superb photographs to be found anywhere."

The ladies, Heaven bless 'em! are unanimous in their opinions for once. For example:

A woman in Toledo, in ordering another book to give to a friend for Christmas, says: "I was so much interested in the story I couldn't stop to comb my hair until it was finished."

A man said to his wife, "I want you to sew on a suspender button for me, Mary." "Oh! don't bother me," she replied; "use a shingle nail; I'll fix it to-night; I can't stop reading now. What a funny name for a book, but the book is funnier than the name."

Says Elbert Hubbard, of the *Philistine*, at East Aurora, New York: "The book you sent us is very charming indeed. It forms a valuable addition to our Roycroft Library."

No photographer can afford to let so interesting a volume pass unread. It should be on every photographer's book-shelf and on the centre-table of every photographer's reception-room. Order early to avoid disappointment. Sent post free, carefully packed, on receipt of $2.50 sent to Edward L. Wilson, 287 Fourth Avenue, New York.

THE NEW BOOKS.

The British Journal Photographic Almanac, 1903. Edited by Thomas Bedding. Forty-second year, 1580 pages. Paper covers, 50 cents; postage, 25 cents extra. American agent, G. Gennert, 24 East Thirteenth street, New York.

Outrageously bulky but delightfully interesting, the familiar *B. J. Almanac* is more than usually welcome this year, when we have but one American year-book to fill the universal desire for an annual summary of the progress of photography.

Apart from almost 1000 pages of advertisements, which are quite as "useful and entertaining" as the text, the principal contents include an article entitled "Chapters on Photo-Micrography," by the editor; about fifty contributions on practical subjects by prominent photographers; a series of pithy "Practical Notes and Suggestions of the Year;" an "Epitome of Progress During 1902," giving a *résumé* of the latest important discoveries and advances; miscellaneous information, many illustrations, and the completest collection of photographic formulæ and recipes ever gathered together in one volume. In its 600 pages of text-matter will be found a mass of useful information for all photographers, professional and amateur.

It is useless to urge our readers to get the *Almanac*, as we learn that the demand is greater than the supply. Those who can get it from their dealer should lose no time in the attempt.

Photograms of the Year 1902. A Literary and Pictorial Record of the Best Photographic Work of the Year, Compiled by the Editors and Staff of *The Photogram*, London. About 200 pages and as many illustrations. London, Dawbarn & Ward, Ltd. New York, Tennant & Ward. Paper covers, $1.00, post free. Library edition, $1.25.

What the *B. J. Almanac* is to those who want to know of the year's progress in technics and apparatus *Photograms of the Year* is to those whose chief interest is concentrated in the year's pictures. Each book is unique in its field and neither book intrudes upon the field of the other. In *Photograms of the Year* the picture lover and maker of pictures has at a glance a record of the year's work as represented by the best pictures of the year, the exhibitions of the year, and a series of illustrated reports upon the pictorial progress of different countries. The new volume, just ready, gives special attention to American photography, and American workers are abundantly represented in its pages.

Among the articles the editor's "Suggestions for Would-be Picture-makers" (see other pages) and "The Divine Idea in Composition" are of unusual value, and should not be missed. The photographer who does not possess *Photograms of the Year* loses one of the most helpful books published for his advancement.

The American Annual of Photography (Times Bulletin), for 1903. Edited by Walter E. Woodbury; 346 pages; about 300 illustrations. Price, 75 cents; postage, 16 cents extra. Library edition, $1.25; postage, 20 cents. The Anthony & Scovill Co., New York.

The American Annual this year combines the two year-books formerly published as the *Photographic Times Almanac* and the *International Annual.* It has, therefore, a twofold interest. The volume is remarkable for the number and quality of its illustrations, in which it surpasses any other photographic annual published. The illustrations are, indeed, worth many times the price of the book, apart from the useful papers on photographic topics scattered through the bulky volume. A notable feature, and one which we are glad to see, is the amount of space given to the camera as an aid in nature study. This is a welcome relief from the pictures of pretty women and children which have monopolized the annuals in past years. Some of the photographs of snow crystals, flowers, birds, and butterflies are remarkable in technical quality. Taken altogether, we consider *The American Annual for 1903* to be the best volume of its series and a valuable addition to the photographic bookshelf.

Isochromatic Photography. By R. James Wallace. 10 cents. Published by the Photo-Beacon Co., Chicago.

In this little vest-pocket book of eighty pages we have one of the most useful handbooks on orthochromatic photography yet published. Mr. Wallace is a master in this field, and tells his story in a simple but practical way.

Color Values in Monochrome. A Lecture on Orthochromatic Photography. By John S. Plaskett, B.A., of the Department of Physics, Toronto University, Toronto. Mr. Plaskett handles his subject in quite a different way from Mr. Wallace, but arrives at practically the same conclusions. His brochure gives a plainly worded introduction to orthochromatics, and should be read by every photographer in the country.

More About Orthochromatic Photography. (The Photo-Miniature Series, No. 45.) Tennant & Ward, New York.

This monograph, from the pen of Mr. R. James Wallace, is a second book on orthochromatism, intended to supplement the eariler monograph on the same subject, No. 6 of The Photo-Miniature Series. It is full of valuable information, and the illustrations show the results obtained with various plates and different light filters. In these four monographs the reader can obtain, for less than a dollar, the complete story of the evolution of orthochromatic photography.

More Light in Negative Making. By Professor David J. Cook, Lecture-Demonstrator at the Illinois College of Photography. Thirty-nine pages. Price, 50 cents.

This booklet is the first part of a comprehensive treatise on the negative projected by Professor Cook. The author says that "it is the direct product of actual demonstration experiment, discussion, and explanation of the many problems which beset the tyro, and is a Photographer-Demonstrator-Instructor's varied and extensive experiences and observations in the studio, on the road, and in the schoolroom." After this there remains little more to be said. The book is divided into four parts, and gives much useful information in concise paragraphs. We wish Professor Cook every success in his educational work, for which there is great need, even among experienced photographers. The complete set of five sections can be had for $2.00.

PORTRAITS *vs.* FACES.

BY WARD MUIR.

WHAT is the definition of a good portrait? is a question which must have risen to the lips of many visitors to the photographic exhibitions. Truly, different photographers seem to hold extraordinarily divergent views on this simple point. There one sees a print labelled "Figure Study," or some equally vague term, which one feels certain was taken as a portrait—nothing more or less. Again, one comes on a picture catalogued "Portrait of So-and-So," which nobody could ever recognize from its original. Is this right? I think not. Surely the first essential of a good portrait is that it should be recognizable. If you are acquainted with the model, and the picture does not instantly recall him or her, then I maintain that the photographer has failed. His photograph may be pictorially good nevertheless. There is no question of that. But to call it a portrait is to court the scorn of the level-headed.

Yet a portrait photograph may be, and is, far from a mechanical production. One has only to look at the masterpieces of certain of our best workers to be convinced that this is the case. It is not enough to turn out a print which is an exact map-like reproduction of a given face. The portrait photographer of to-day must go deeper than that. And the desire to do this has doubtless been the cause of much "freak" work. Some photographers, realizing that the face is not everything in a portrait, subordinated it away to the

other extreme, with the queer result that —not so very long ago—we were startled by portraits wherein the face was to all intents and purposes absent. A phantom ear, the faintly luminous back of a head, and an arc of collar, three fingers of a ghostly hand—these were served up to us as examples of what the new school of portraiture could, and would, do. It was claimed that even in these eccentricities there was likeness expressed by means of lines and lights indicating a typical pose of the sitter. Were this true, then to label them "portraits" was admissible. But, unfortunately, in nine cases out of ten it was *not* true. Pose had gone the way of Face, and been lost. Still, we cannot have progress without somebody running on too far ahead, and the spectral school have left a mark and taught their lesson. They have gone, though. They themselves (a glance at the Dudley Gallery's walls would show) have modified their mannerisms. Faces have come into fashion once more in portraits.

But we must not become slaves to faces. Faces are mere vehicles for expressions; let us try and realize this vital point. And it is *expression* which the true portraitist grasps and sets down on his canvas or his plate.

Features are themselves subordinate, except as indications of spirit and temperament. Emerson spoke with no uncertain note on this point in his *Essay on Art.* Talking of a painter, he said: "In a portrait he must inscribe the character and not the features, and must esteem the man who sits to him as himself, only an imperfect picture or likeness of the aspiring original within."

Has any photographer gone that length? Personally, I do not think so. The great portraitist of photography is still to come. But some of our workers have nearly reached this point. And what a wide gulf is fixed between their productions and those of the men who have not realized its existence at all! the men who take Faces, Faces, Faces, and never try to express the something which looks out from behind those Faces' eyes.—*The Photographic Art Journal.*

THE ACT OF SEEING.*

BY PROFESSOR VON BEZOLD.

THE transparent media of the eye act upon the light which enters them in a manner similar to the lenses of the camera employed by the photographer. They produce in the interior of the eye an image of the objects of the outer world. This image, under normal conditions, is projected upon an exceedingly delicate membrane, which is spread out in the inner part of the eye, and is called the retina. The retina is composed throughout of nervous elements most cunningly constructed, each element being connected with the brain by fine nerve fibres, which together form the so-called optic nerve. These elements are excited by light impinging on them.

The processes which a ray of light, or a bundle of such rays, is subjected to, in so far as they take place outside of the eye, are of a purely physical character. The passage of the rays through the transparent media of the eye is likewise regulated simply according to the laws of inanimate nature, and upon the retina of an eye freshly cut from a dead animal; the image is produced as sharply and as clearly as upon that of a living eye.

The processes on the retina, on the contrary, are of quite another kind. They are based upon the peculiar activity of the living organism, and their investigation instead of being a part of the domain of physics, belongs to physiology. When two pigments are mixed upon the palette, the light emanating from them passes, before it reaches the eye, through a physical process, the laws of which are completely independent of the construction and of the activity of the sensitive organism. If, on the contrary, light of various colors falls simultaneously upon one of the elements of the retina, the different impressions must be blended into one upon the retina, and it is even possible that the blending does not take place until after these impressions have reached the brain.

* The Theory of Color. L. Prang & Co., Boston.

In seeing, there are furthermore associated with these processes of a physical and a physiological nature the activities of the reasoning faculty and of the judgment. The image of the outer world is formed upon a child's retina quite as clearly as upon that of a grown person, and the sensitive elements are the same in both cases; nevertheless, the child reaches out its hands after the sparrow upon the roof, or will even attempt to catch the moon. In the course of time, however, the child, by means of the small differences between the images in the two eyes, which are caused by the difference in the position of each eye in relation to the objects existing outside of it, and by availing itself of various other circumstances, acquires the faculty of judging of distances, and therefore immediately *sees* things in their proper position.

EDITOR'S TABLE.

THE useful handbook on *Patent Developers and A. G. F. A. Specialties*, issued by the Actiengesellschaft für Anilin Fabrikation Co., Berlin, will soon be ready in a new and enlarged edition. The book can be obtained, gratis, from any of the larger dealers in photographic supplies, in February.

F. E. IVES, formerly of Philadelphia, has associated himself with the IVES PROCESS CO., 552 West 25th St., New York, and will hereafter be permanently located in this city. The sale of Kromskops and Kromskop supplies will be continued from the new address, but the chief business of the new company will be trichromatic printing by improved methods.

AS H. SNOWDEN WARD points out in his admirable paper on "Suggestions for Picture-makers," in *Photograms of the Year* 1902, there is great need of a closer study of orthochromatism by professional and amateur photographers. To those who have realized the need of this study we commend a careful reading of the *Photo-Miniature*, No. 45, just published by TENNANT & WARD, entitled "More About Orthochromatic Photography." This little handbook supplements No. 6 of the same series, and is full of useful information.

AMONG recent specialties designed for professional use few have reached such a degree of popularity or deserved their success so honestly as the New Silent Shutter, made by the CONLEY CAMERA CO., of Spring Valley, Minn. It is only six months since this shutter was first announced; but we learn that since its introduction many thousands have been sold without a single complaint on the part of those who use it. We have tested the Silent Shutter and find it to fulfil every claim made by its manufacturers. It is a convenience needed in every gallery, and our readers will find it a profitable addition to their studio equipment.

The CONLEY CAMERA CO. is also the manufacturer of the Success Vignettes illustrated in our advertising pages. This is a simple but entirely practical device which does its work effectively with a minimum of manipulation. A card addressed to the CONLEY CAMERA CO., Spring Valley, Minn., will bring illustrated circulars describing these and other specialties in detail. Send for them.

THE most wonderful of all photographic journals in typographical display and pictorial features is the new quarterly *Camera Work*, conducted by ALFRED STIEGLITZ, 162 Leonard St., New York. The first number, just published, sells at $2 per copy, the yearly subscription being $4 per year. We congratulate Mr. STIEGLITZ upon his remarkable performance, and wish him every success in his enterprise.

THE STANDARD DRY PLATE CO., Lewiston, Me., sends a useful little guide entitled *Development Simplified*, which tells the story of development in an extremely simple and practical way. The booklet is the work of Mr. M. B. PUNNETT, the chemist of the S. D. P. Co., and does him great credit. Copies can be obtained gratis on application to the offices of the company at Lewiston. It deserves wide circulation and a careful reading.

THE BAUSCH & LOMB OPTICAL CO., Rochester, N. Y., tell us that the extension of the time for closing their Twentieth Century Photographic Competition to October 1, 1903, has been widely welcomed by intending competitors. The awards offered in this competition, amounting to $3000 in value, make it well worth the attention of our readers. Particulars can be had on application to the company's offices.

SOME days ago we had an opportunity to look through a large collection of commercial photographs by a photographer of wide experience. The splendid quality of the work from a technical viewpoint made us ask the time-honored question, Whose plates do you use? The answer was, "Cramer plates of various brands, and I could desire none better."

The Photogram (Arundel St., London; $1.25 per year) has prepared an unusually attractive programme for the new volume, which begins with this month. American professionals will do well to see this magazine regularly during 1903. Its contents are carefully made up to help the practical worker, and many original papers of value are given during the year.

THE BRIDE

By Izaak de Vos, Chicago

WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XL. FEBRUARY, 1903. No. 554.

MEETING OF THE EXECUTIVE COMMITTEE OF THE P. A. OF A.

Indianapolis, Indiana, January 12, 1903.

PURSUANT to the call of the President, J. Geo. Nussbaumer, of Buffalo, N. Y., the Executive Board of the Photographers' Association of America met in executive session at Indianapolis with the following members present:

J. Geo. Nussbaumer, President; J. E. Giffin, Second Vice-president; F. R. Barrows, Treasurer; G. G. Holloway, Secretary.

Mr. A. H. Collings, the First Vice-president, having accepted a position with the Standard Dry Plate Company, and not being eligible to serve on the Executive Board, tendered his resignation, and C. R. Reeves, of Anderson, Indiana, was appointed in his stead. The committee then organized as a whole, and on motion it was decided to hold our next convention August 4 to 7, 1903, inclusive.

The Secretary reported on finances as follows:

Received on 1901 account	$197.50
" for advertising	979.00
" from sale of space or desks	1963.25
" entertainment fund	100.00
Total receipts	$3239.75

The Treasurer reported as follows:

Cash on hand January 1, 1902	$4379.54
Received from membership and dues	2196.00
" " Secretary	3239.75
" " sale of ladies' pins	50.25
" " G. M. Edmondson	49.24
Refund—Trunk Line Traffic Association	17.00
Total	$9931.78
Paid on vouchers	4755.98
Balance on hand January 1, 1903	$5175.80

The President appointed Geo. G. Holloway and J. E. Giffin a committee to audit the books of the Secretary and Treasurer, which were found correct and approved.

On motion, it was decided to accept the offer of Das Deutcher Haus (The German House) as the most desirable place to hold our next convention.

On motion, it was decided that the exhibition of pictures be strictly complimentary, and that no prizes shall be offered, the committee holding that the educational features of the convention were most to be desired, and that the exhibitor has a sufficient incentive in the production of his idea of the highest type of photographic portraiture to be compared with the product of other members of the fraternity.

The President then appointed the following committees:

Transportation: J. Geo. Nussbaumer and Geo. G. Holloway.

Badges and Buttons: F. R. Barrows, J. G. Nussbaumer, and G. G. Holloway.

Hotels and Accommodations: J. E. Giffin and C. R. Reeves.

Decorations and Hall: C. R. Reeves, J. E. Giffin, and F. R. Barrows.

Association Review (the official journal): C. R. Reeves, F. R. Barrows, and Geo. G. Holloway.

Entertainment: J. E. Giffin, G. G. Holloway, J. Geo. Nussbaumer, and C. R. Reeves.

Printing and Advertising: J. Geo. Nussbaumer and G. G. Holloway.

Committee of Information: J. E. Giffin.

On motion, it was decided to call the publication authorized by the Association, *The Association Review*, the official journal of the P. A. of A.

The following rules were adopted to govern the exhibition of pictures:

First—Exhibits may be framed or unframed at the discretion of the exhibitor.

Second—The Association will not be responsible for any loss or damage to pictures in its charge, but special precautions should be taken by the Executive Committee to insure the safe return of all exhibits entrusted to its care.

Third—All pictures exhibited must remain until the close of the convention, and will not be delivered to anyone but the exhibitor without a written order.

Fourth—Application for space in the Art Department shall be made to C. R. Reeves, First Vice-president, Anderson, Indiana.

Fifth—All pictures submitted for exhibition must be addressed to C. R. Reeves, First Vice-president, care German House, Indianapolis, Indiana. Forwarded at owner's risk, and delivered not later than August 1, 1903. All charges prepaid.

Sixth—Have your box covers screwed on instead of nailed. Your home address must be marked on the under side of cover for return of pictures. The Association will not be responsible for exhibits not packed in accordance with this rule.

Seventh—Exhibits for manufacturers' and dealers' department to be shipped to Geo. C. Holloway, Secretary of P. A. of A., Indianapolis, Indiana, care of German House. All charges prepaid, and must be placed in position not later than August 3d.

Eighth—All boxes and packages will be accepted at any time previous to August 1st, so that exhibitors need not feel any uncertainty about the safety of their goods. No exhibits will be allowed to be removed from the hall until the close of the convention.

Ninth—No manufacturer or dealer, or their representatives, shall be represented on the floor of the hall unless he or they rent floor space or desk room, and the manufacturer or dealer shall in addition pay $2 for each representative attending the convention.

Tenth—Employés to gain admission to the convention at employés rate ($2) must furnish certificate from employer or be endorsed by two active members of the Association.

Eleventh—Dues shall be paid to F. R. Barrows, No. 1873 Dorchester Avenue, Boston, Mass. Membership, $3. Annual dues, $2.

P. S.—By promptly paying your dues to the Treasurer you will avoid the necessity of standing in line at the box office.

GEO. R. HOLLOWAY,
Secretary.

TERRE HAUTE, IND.

A NEW PHOTOGRAPHIC LIGHT.

(THE HEWITT MERCURY VAPOR LAMP.)

A NEW light which offers more possibilities to photography than most of the much-vaunted new lights of recent years is just now being exploited in England. Though receiving European booming, it was worked out on this side by Peter Cooper Hewitt, of New York, a grandson of Peter Cooper. Mr. Cooper's demonstration of the light before the American Society of Mechanical Engineers, New York, was reported in our issue of April, 1902. The invention is an electric light in a glass tube. The light is caused by the incandescence of vapor of mercury, instead of by the incandescence of a solid—usually carbon—as is the case in all other artificial lights at present in extensive use.

The features of the lamp which particularly commend it to photography are the color and the diffusion of the light.

The color is a pale but very decided blue. Red rays are practically absent from the light, thus making it highly actinic. As the light is caused by the glow of a

vapor enclosed in a tube of appreciable size, we get a long lambent glow in lieu of the aggressively bright filament or "point" of other lamps. This large area of glowing vapor gives a soft light without the hard, sharp shadows of more concentrated illumination. Its candle-power per square inch is one-twentieth that of the incandescent light or one three-thousandth of the arc; but then it covers an appreciable number of square inches.

One of the difficulties of the adaptation of the electric light to portraiture has been the short life of the lamps when worked under the needful high pressure. The life of this new lamp is theoretically infinite. In practice it has run for two hundred consecutive days—ten-hour days—without appreciable decrease of efficiency. It is advised, however, when the light has run some fifteen hundred hours to open the tube and wash it. After the tube is re-exhausted it works as efficiently as when new.

As at present supplied, the tubes may be obtained from three inches long and one-eighth inch diameter—giving a sixteen candle-power to twelve feet long and three inches diameter, with a candle-power of thousands. The softness of a light twelve feet in length as against one of equal power emanating from the small compass of an arc lamp is apparent.

A light from which the red rays are absent will be very incorrect in its rendering of colors or color values. Its makers claim —though this is but a side detail of its probable usefulness—that in it we have the ideal light for portraiture. In its softness, as in its regularity of working, it is probably all that can be desired, though it is open to doubt whether one who was not used to the ghostly blueness of its glow would be able to conjure up the supposedly necessary pleasant look. This defect doubtless can be overcome by the addition of other lights to give a more healthy color to the illumination.

For photo-engraving it will have a large usefulness, also in all places where great quantities of printing can be done. A vapor tube can be made in any shape, thus giving a solid as well as a constant glow of color. For enlargements or for lantern work, it will dispense with the condenser. Indeed, there can be little doubt that in large printing-rooms its evenness and high actinic power will make it indispensable. With a little adaptation it should become equally an institution in the studio.

HOW OBSERVATION PAYS.

BY F. ROUNDS.

Is it an advantage to be at the top of the tree? Or what is the top of the tree? One man born on a mortgaged farm lifts the mortgage; and by the time he is fifty, and in the prime of his usefulness, he has a house in the village and owns three farms with managers living in each farmhouse. Another man born in equally adverse circumstances, but in a large city, comes to the top, and is a millionaire president at forty. One man is not more able than the other—it has been a question of different opportunity. Forcing city life has rushed the natural aptitude of the one; pastoral pace has attached the other to a quieter ambition. A man may be at the top of a small tree; and it is quite possible that he is just as useful in his place, and gets as much comfort out of life as the man at the top of a large tree.

There is one thing which, as I have noticed, is common to every top-of-tree man, and that is intelligent observation. The president-manager knows to a fine point the exact cost of maintenance of each department; he knows to a fraction what each section is doing and where to watch for a leakage. His eye is on everything that directly or indirectly affects business. The farmer has discarded old way-back methods. He learns from a trustworthy source the value of the different brands of phosphate. He makes use of the State experiment station, and he reads the agricultural bulletins. *His* hens never yield poor eggs, poor either in number or

quality. He understands the "why" of everything; and to attain a satisfactory result he works for it.

The moral is trite. But I am not working toward a moral or a sermon on business methods. Merely the one question of observation. The photographer needs a dual education, that of technique and that of observation. The former is fairly easy to learn; the latter is perhaps equally easy, but it is not learnt. A man cannot start in to be a photographer until he has grasped at least some of the technique of the work, but he will make shift to get along without any modicum of the observing faculty. All photographers of any ambition aspire to attend one of the conventions. They love to look at the pictures there; but there is enough evidence to show that only the technical part appeals to the greater number of them. The sameness which pervades the work of more than 90 per cent. of the photographers results from a lack of observation.

How are they to observe? how are they to get new ideas? Bunyan tells us that there are two principal entrances to the citadel of man—eye-gate and ear-gate.

And by the eye the photographer must learn—from life, from the printed page, from the illustrated page. At considerable expense a man hears a speech at the convention. He goes back home with the knowledge that he has picked up one or two hints worth knowing. The same speech comes to him at the end of the month. Perchance he glances through it and sees nothing worth noting—there is never anything worth noting or worth remembering unless one reads *carefully*. A man will spend a long time before a rival showcase, and he will turn the pages of a pictorial magazine in a third of the time. And yet those pictorial pages reproduce the *essential* features of pictures—those from which the photographer may learn. Reading or the looking at pictures is not a mere cursory amusement; it is, or should be, an incentive to thought. Thought and information are natural requirements of the photographer. He feels the need himself, and flocks to the convention to satisfy it. Whether he really finds it there, unless he has previously trained himself to detect it, seems open to doubt. Certain it is that one man does not pick up one-tenth of what another man does.

The man who wants to get on should have a live appreciation of what others are doing. A man cannot be too omnivorous a reader if only he reads thoughtfully and with understanding. Every idea that widens the brain widens it all around; it makes easier the entry of the next idea. It is wonderful with how little effort a book can be glanced over; but to be read (if indeed it be worth the reading) takes time. Every picture that is studied can teach something, if only something to be avoided. It is so easy to see the faults in outside work, and so genuinely difficult to detect them in our own, which is with us so constantly that we lose the faculty of criticising it.

Inspiration is to a great extent the unconscious utilizing of ideas which have been gathered from time to time. Picking up ideas is profitable employment; if we can identify two which we have gleaned the odds are that we are really the richer by three or four. Ideas are everywhere around us, and nowhere are they in a condition easier to assimilate than in the printed page. The man who neglects his reading, or does it perfunctorily, is forever missing his opportunities.

Isochromatic roll films have been placed on the market in Great Britain. These are manufactured by Austin Edwards, a pioneer in film making. They are obtainable in cartridge form adapted for use in all roll-film cameras, and in lengths suitable for six or twelve exposures.

Another novelty on the British market is Pelloid Plates, introduced by the Eastman Kodak Co. These are thin cut films fastened to a card mount at the edges, which support is easily removable before development. Thus, they may be used in any plate camera without special devices. They are perfectly flat, and are said to possess an anti-halation and orthochromatic qualities. Their weight is one-fifth that of the ordinary dry plate, and the price of the 4 x 5 film (in England) is 2s. (50 cents) per dozen.

THE CONVERSION OF THE SILVER IMAGE OF BROMIDE PRINTS INTO PLATINUM.*

BY C. WINTHROP SOMERVILLE.

In coming before the Society with this paper I much regret that I am compelled to state the effects of the process without the cause. During four years' patient research, however, I was unable to get any outside information on the subject whatever, and my results were obtained by almost blind experimental work with few and vague theoretical chemical considerations to guide me. My investigations were prompted by a call for two very desirable features in the bromide process, both of which could then only be obtained in the platinotype and carbon processes; one was permanency and the other a sepia color.

It was in the year 1887 that I first took up bromide printing. I soon saw the possibilities and superiority of it over other printing processes, more especially in the matter of large work, but it was not till about eight years later that I started my investigations for the obtention of the two features named.

Many new formulæ for toning bromides were published about that time, and among them for sepia tones were lead, uranium, and sodium sulphantimoniate. On trial these seemed to me anything but satisfactory, and even with the present-day revised formulæ I think no better of them, especially uranium, which has the questionable property of giving up its tone by washing.

There may be some who will question my right to condemn the above processes, and substantiate their queries with graphic evidence of their value for a sepia tone, but I beg to say in part justification that I am speaking more on behalf of others than myself, The majority of photographic workers are not chemists, and only in very rare instances do we find a published formulæ accompanied by any chemical and physical considerations for the best working of the process; therefore, for this reason, I say that the originators of the formulæ are to blame for unsatisfactory results obtained by the majority of those for whose use it was intended. With regard to the permanency of the foregoing, no one with any knowledge of chemistry will deny that they are all of a most unstable order.

With some other formulæ for sepia tones are we any better off?

Take, for instance, cases in which the base for the subsequent tone is formed by converting the metallic deposit of silver into silver chloride by means of a mercury salt. Here we get a range of brown tones, not sepia, by reducing the bleached image with sodium sulphite, liquid, or gaseous ammonia, ammonium sulphide, etc., the resulting tone being formed of a complex amalgam of mercury and the reducing agent used. That the colored image formed by these reagents is not permanent I know only by experience, and my knowledge of their unstable construction is obtained more from text-books on the subject than from practical chemical application.

In my initial proceedings I had to decide which was of the most importance, the tone or the permanence, and I feel sure you will agree with me in saying that no tone, however fine, is any good if not permanent; therefore permanency had the prior consideration. This induced me to enter in detail upon the chemical and physical considerations of the permanency of photographic printing processes, and taking bromide, carbon, and platinum as the three most generally used for artistic reproduction, the following is a brief review of my reasoning:

Platinum, we know, is the most stable of all metals, and in however fine a state of division is practically indestructible by atmospheric conditions. Carbon also is unaffected by atmospheric influence, but the same cannot be said for all the other pigments used in the process.

Silver in a perfectly pure state is a fairly

* Paper read before the Royal Photographic Society.

stable metal, but inferior to the others with regard to atmospheric influence, and more so when in combination with a weaker metal. Now, the image of a platinum print, if properly worked, consists of pure platinum in a fine state of division, chemically known as "platinum black," and is supported in or on *paper*. The image of an untoned bromide print is similar in every way except that the metallic deposit is generally incorporated in a film of gelatine, and is also supported on *paper*. In a pure carbon print the image consists of lampblack contained in the form of a mechanical mixture, also supported on *paper*. (I emphasize the support for the sake of comparison, as it is well known that other supports, such as linen, silk, wood, opal, etc., may be used in either process.) Light has no influence on deposited silver, platinum, or carbon, and may be discarded as a deteriorating element. The atmosphere, were it pure, would have no influence, since none of the elements are affected to any photographic extent by oxygen or nitrogen ; but it is usually contaminated in a greater or less degree with other and deleterious gases.

These contaminating gases principally consist of carbon dioxide, sulphur dioxide, sulphuretted hydrogen, and carbon monoxide. Of these, sulphuretted hydrogen is the most injurious. On carbon it has no effect ; on platinum it also has no effect ; on silver it has a slight effect, but no human being could live in the atmosphere which contained the amount necessary to affect the silver. It will, of course, be borne in mind that I am speaking of pure metallic silver reduced from the compound salt, silver bromide. If, on the other hand, the image consisted of an organic salt of silver, such as an albuminate or a gelatino-chloride, which has been reduced by the action of light, then it is a very different matter. An organic salt is extremely susceptible to even minute traces of sulphuretted hydrogen, in the presence of which the surface of a print will soon be coated with silver sulphide. A simple salt of silver, such as the chloride, is also very sensitive to the influence of sulphur in almost any form. But as these forms of silver printing do not come within our category, they need not be considered.

If, therefore, an image consisting of a deposit of pure metallic silver, formed by reduction from the bromide salt be perfectly freed from everything but the gelatine film in which it is supported, surely it exists in the same state of immunity from extraneous influence or contamination as the platinum, which is reduced and deposited in a precisely similar manner by an organic salt of potassium instead of an oxygen-absorbing reagent.

If the paper contain any impurities liable to affect the element it supports, the deterioration is directly proportional to the stability of the element or metal deposited on it.

If the deposit be in immediate contact with the paper, then surely deterioration would be more rapid than if it were supported in a gelatine film. Personally I am of the opinion that in all three cases the paper support is likely to fade or deteriorate before the carbon or metal deposits. I might mention here that the silver deposit on a bromide print is always in danger of a certain atmospheric effect. When a violent thunderstorm occurs in close proximity the air gets charged with ozonized oxygen, due to electrification (if I may use such a word) by continual discharges of lightning, and, to quote Watts's *Dictionary of Chemistry*, "finely-divided silver in a moist condition when acted upon by ozonized oxygen is converted intc peroxide of silver;" therefore, when thunderstorms abound place all your bromide prints in hermetically-sealed glass boxes. On the question of permanency, then, of an untoned bromide print, we might say that there is but little difference between it and the other two, providing all the chemical and physical conditions under which the print should be produced have been complied with. Arriving at this conclusion I was met with the danger—which at the present day still obtains—that, in toning, the permanency was rendered uncertain by the fact of forming an amalgam with one or more metals of less stability.

There remained only one course open, to form an amalgam with a stronger metal or effect a substitution. I tried the amalgamation with iron, platinum, and gold, but probably owing to the blind manner in which I directed my experiments my re-

sults were totally unsatisfactory. Just at this time a chemical friend, who was not a photographer and could not therefore thoroughly appreciate my difficulties, suggested the application of platinum in a very fine state of division, which gave the well-known sepia deposit.

Upon trying this, both in the way of an amalgam and a deposition, and meeting with some success, I gave much further consideration to the process. It would be useless and wearying to give a detail of all my experiments, as many of them were carried out with a lack of chemical knowledge of the reactions involved and only served to reduce the limit of my endeavors.

Suffice to say that I reached a point where I could substitute platinum for the silver and completely eliminate the silver. But here I received a check—the platinum was left in the form of a black deposit. Curiously enough I came across a similar process for the same result in one of the photographic journals about six months later. The formula is as follows:

Potassium Chloroplatinite	5 grains.
Hydrochloric Acid	10 minims.
Water	5 ounces.

(Suggested by Vogel in 1887.)

This produced a fine black tone, which defied the bleaching action of mercury, and in order to prove if the substitution was complete or only partial, I applied a cupric bromide bleacher.

Copper Sulphate	200 grains.
Potassium Bromide	200 grains.
Water	20 ounces.

There was no indication of bleaching after the expiration of fifteen minutes, but upon the application of a hypo fixing solution the image rapidly faded till it reached a stage of about half its original depth of tone, when it remained permanent and indestructible. This seemed to indicate the presence of silver, and in order to prove it I subjected another toned print to the action of cupric bromide, and, after washing, applied a rodinal developer, with the result that the image intensified to an enormous extent and of an exquisite blue-black tone. Upon again applying the bleaching solution and dissolving the silver bromide formed, the image faded away to the weak state previously mentioned.

These experiments proved beyond question that the substitution of the platinum for the silver was only partial, and that, no matter how long the immersion or how strong the solution, the substitution was limited. While this was to some extent discouraging, it was nevertheless a great point gained on the question of permanency, and I was convinced that if platinum could be reduced to the metallic state of a sepia tint, as in the platinotype process, it could be done by other means. The simple chemistry of toning ordinary gelatine chloride prints with gold, and platinum appealed to me strongly at this stage, and I fully consulted such current authorities on the subject as Abney, Wall, Davanne, Girard, and others. I applied my knowledge by combining a solution containing platinum with one of mercury with the idea of simultaneously bleaching the silver and depositing the stronger metal. Whether such action took place I regret that even now I am unable to say, but the fact remains that I obtained the first approach to a sepia in this way. True, the process was far from being satisfactory, since unless a very great quantity of platinum was used, the print bleached too rapidly, the tone being much too light. This seemed to indicate the want of a restrainer, and upon the application of a citrate I got very near to what I wanted. I say very near, because, after many experiments, I found that the proportions of the bleaching and restraining reagents must be exact and invariable, while the quantity of platinum is immaterial, affecting only the speed of toning or deposition. The complete and best working formula I have found is:

Potassium Chloroplatinite	1 grain.
Mercuric Chloride	1 grain.
Citric Acid	9 grains.
Water	1 ounce.

The speed of the toning action with this formula is about the same as that of an ordinary gold or platinum bath with P. O. P. The tint produced is of a warm sepia, and may be varied slightly by increasing the mercury, when the tone will be somewhat lighter.

Platinum bichloride may be substituted

for the chloroplatinite, but other salts, such as the ammonium chloroplatinite, do not work satisfactorily. Now, as I said at the outset, I am giving you the effect without the cause, for I confess that I am not at all sure of the chemical reaction which takes place in the process, especially as mercury is the only bleaching agent with which it will work. As a toner, the formula given has a peculiarity which, I believe, is singular.

It is well known that most, if not all, toning formulæ for bromides—the hypo and alum excepted—produce intensification in a greater or less degree, thereby engendering an uncertainty as to the subsequent depth of tone of the print. In the present case the intensification is slight, but of such a degree that the scale of gradation of a fully toned print is almost precisely the same as the original scale of black to white. The value of this is obvious, since a print may be developed in the first instance to its ultimate required depth. So much for the simple tones; there are, however, some concomitant features discovered later which are of interest.

A solution made up from the foregoing formula has a slight tendency to stain the gelatine, and it was not till quite recently that I found a remedy. While testing its powers on the bromo-chloride gaslight papers I found that the action of the mercury on these was much too energetic, and instead of increasing the proportion of citric acid I added some 10 per cent. bromide of potassium. The application produced exactly what I wanted, and revealed something else, an exquisite power of intensification and a complete absence of staining. Personally I cannot speak too highly of this feature, its effect upon "muddy" prints being very fine. One to three drops of 10 per cent. bromide of potassium to the original formula is sufficient, and intensification practically instantaneous. It may be applied locally, but the solution should be dilute and strengthened if required. It acts equally well for negatives, giving a fine purple-black color. The tint produced with the addition of the bromide is of a colder sepia.

Platinum bichloride produces rather a colder and browner tint. The following are some advantageous features of the process. If a print, when toned, lacks depth, it may be immersed in a bleaching solution of

Copper Sulphate	200 grains.
Potassium Bromide	200 grains.
Water (boiled or distilled) . . .	20 ounces.

All to remain for three minutes, rocking the while. Wash in running water for one minute and apply any developer used for bromide work. Great intensification with a return of the original black color is the result. It may then be retoned.

If, after being subjected to the bleacher the print is immersed in a hypo bath, the silver is dissolved out, leaving a light sepia image of pure platinum. A solution may be used till exhausted in platinum, but will continue active if more platinum be added. It is advisable in large work to tone by means of a brush, standing the dish in a nearly upright position and allowing the solution to collect in the bottom. By doing this a fairly concentrated solution can be used, rendering the process much quicker and more economical.

As a test for permanency the following experiments were made: A print, one-half of which was covered with card-board, was exposed in a window to a southern aspect for two years, and showed no trace of fading. A print was subjected to the following solutions in the order given:

1 hour in	50 p. c.	ammonia. No change.
"	"	sodium hydrate. Slight softening of the paper.
"	25 "	HCl. No change.
"	"	HNO_3. "
"	"	H_2SO_4 "
"	"	Aqua regia (cold). Slight fading

Another print in hot saturated solution of bichloride of mercury. No change.

A last and not unimportant feature is a great hardening action on the film of such an extent that a print may be toned by leaving it immersed in a solution for any time up to four days without fear of blisters. A solution may be heated up to 90° F., the action being thereby quickened. It works equally well with all brands of bromide paper, although toned papers are inclined to give an unpleasant yellow tint to a finished print if the toning is protracted.

In conclusion, I would like to say that

this paper is one of many endeavors to raise the bromide printing process with its illimitable possibilities to a far greater and more deserving height than it has at the present day attained.

Some thanks are due from me to one of our greatest authorities on photographic chemistry, Mr. E. J. Wall, for information on the subject of the substitution of platinum for the silver of a bromide print.

THE COUNTRY PHOTOGRAPHER.

BY E. S. KIBBE.

To the photographer in a country town photography presents an entirely different view than to his brother in the city. In the first place, he must have the ability to adapt himself to anything that may be required of him. He must be able to do at least fairly good work in the studio, out-of-door views of houses, stock, etc., interior views, also commercial work, any of which is a profession in itself. Besides all these, he must be able to make a portrait in an ordinary room, with no light but an ordinary window, and with none of the conveniences with which any studio is supplied. He must be operator, retoucher, printer and finisher, and (the most essential of all) he must be a business man, capable of handling the business end of the establishment in a business way, or failure is almost certain. That a comparative few are able to grapple with all these points is only too apparent. It is only necessary to go into any of the stock houses and notice what a very small percentage of photographers in small towns have any financial standing. I will venture to say that three-fourths of the country photographers are obliged to send cash with order, as goods will be sent C. O. D. There are many reasons for this, the principal one being a lack of business ability. By that I mean the faculty of conducting their affairs on a business basis (and let me say right here that in a great many cases the better the photographer the poorer the business man). Another reason is, they do not adapt themselves to all the different lines of the business. For portraiture in an ordinary room, it is only necessary to have a fairly quick working lens of not too long a focus (not a wide angle, as this is too apt to distort) attached to your view-box. Sit the person a short distance from the window, and also back of it, so that the light will strike at an angle of about 45° from the front. If necessary to soften the light, cover the window, or a portion of it, with white muslin or cheese cloth, and if the window is large, so as to give plenty of light, it is frequently of benefit to cover the lower part with dark cloth so as to give you a lighting more from the top. In this case, place the sitter a little farther from the window. A few trials will surprise you as to the results you can obtain if you have never tried it. Of course, it is understood the sun is not to shine on the window used.

In taking interiors of rooms, you require a lens of not less than 80°, and 100° is better, otherwise you will not get enough of the room in the picture. See that the shades are down on all windows coming within the angle of the lens, and after making the necessary exposure, if you wish windows to show, cap the lens, raise shades, and give a very short exposure, thus showing the windows and not causing halation. For interior work, use a small stop and give plenty of time.

In regard to the business end, keep accurate account of all your receipts and expenditures; then you can tell at any time exactly how you stand. Do not experiment with every new thing that comes along, but wait and satisfy yourself that it is something which is of benefit; then buy it. A great many dollars are spent yearly by the majority of photographers on some new article or "fad" that comes out that is absolutely worthless from a business point of view. Try and keep up with the times, but if you attempt to purchase every new thing that comes out, no photographer's income would be sufficient to pay for them. Again, a great many will purchase expensive trays (which are very nice if you can

afford them), but a little thin lumber from a packing box and a piece of oilcloth will make one "justas good" so far as working qualities are concerned. File every negative alphabetically with name and number; then, if you have a call for duplicates, the negative is easily found, and if you wish to sell, you have a stock of negatives that is of value, as he can find them as easily as yourself.—*American Annual, 1903.*

THE CUSTOMER'S WELCOME.

BY F. STANARD.

THIS morning, finding myself in this strange city, and with a spare hour on my hands, I tried to improve the hour by making the acquaintance of F. F. is a smart young fellow, and I am an old fogy, so perhaps it is natural that I should be carping. When I was there I stood aside to let him deal with a sitter. F. was born abroad—I believe he has only just become naturalized—so there is excuse for him. But he showed a sad lack of tact in handling his customer. He "washed his hands," he bowed and smirked—and he flattered. In the case of this particular sitter he would have scored by displaying a little restraint and more self-respect. Flattery can only be trowelled on with certain people. This much I will say for F. In six years he has built up a business which probably pays better than does mine, which has been building up—or, at least, been in existence—for as many years as I care to remember. He does good work for the money—a low price and lots of sitters is what he goes for—and he is capable of doing better work. But if he continues to adopt servility as a basis of welcome he will find his trade become a trade for work girls or waiters of foreign birth.

One of the first things for a photographer to learn is how to receive and welcome his customers.

A tactfulness in the reception-room and under the skylight will go very, very far in business. The reception assistant should have a pleasant, sincere manner with everybody. If a working girl has but a dollar to spend for a few midgets, let her take away pleasant memories of courteous treatment. The dollar is not much in the cash balance, but it looks big to the girl's eyes; and if, in exchange for it, she gets a pleasant reception and the treatment accorded to a woman in silk, in addition to her midgets, she feels she has got double value for her money. "Every one is well received," you say. Doubtless, in your studio; but I know galleries where a dozen plates are exposed on a pretty, over-dressed girl, while a couple suffice for the old lady whose grandchildren and their parents have been teasing her to be photographed for the last three years.

A business man should have an eye to business. If we went into a store and saw an attractive girl buy a dress at 15 cents a yard cheaper than her grandmother could have bought it we would be justified in looking on the storekeeper as something like a crazy man. But this is what we see in many a studio.

I began by complaining of a servile man. This rather rankles a free-born man; and, if it worries me, I conclude that it must rankle other people.

A photographer should, with sincerity and dignity, make every caller welcome—in brief, he should exercise tact. If a man is not sincere in his welcome people will notice it. If he does not exercise a certain dignity he will place himself in an inferior position when dealing with the more refined or educated of his customers.

The tact of the reception-room goes far toward the amount of the order. A tactless person quotes prices, and often frightens customers by pushing the claims of platinotype or other high-priced work. Nothing hurts a person with little money more than having to persistently refuse offers of expensive lines when the purse can only stretch to cheaper ones. By all means, keep the better work in sight, even when the cheaper is being selected, but don't make the customer feel that there is any suspicion of "no class" about the

cheaper work. A photograph is everyday business to you, it is something special to them. A chill at the photographer's is like a wet Fourth of July. But, where the customer can afford it, tact can often add some specialty to the order for a dozen cabinets, or may increase the number ordered. Tact pays. If the over-dressed girl has been courteously received and flattered (there has been no need to use a whole dozen of plates on her) she tells her friends what she thinks of the nice photographer. The dollar work girl does the same; and such testimonies do no harm. I firmly believe, as the result of a not inconsiderable experience, that the word and good will of a pleased customer is an advertisement well worth having. Grandmother's testimony is the best of all. She has rather dreaded the visit. Her last experience was years ago, when cruel jokes were woven around the posing-chair. Her reception gave her confidence and her dread was lessened. There was no headrest, only a comfortable chair. She received that courtesy and deference which all women appreciate. In short, she felt that it was a comfortable sort of shopping after all, and her feeling of satisfaction is reflected in the photograph. She has her ideas of Mr. Photographer; and her children think that mother's likeness is fine. New business will surely follow satisfaction of this sort.

PROFESSIONAL NOTES.

RANDOM JOTTINGS FROM EVERYDAY WORK.

We talk a great deal about fraternity, and we believe in it, too, but we are not above profiting by the misfortunes of our friends; that's all in the way of business and fair competition.

About a month ago our alderman came to the gallery for a sitting. He was hot against B—— (another photographer), who "couldn't take a picture worth a ——!" More than probable B—— was not to blame; but it was my business to look out for better success myself. My customer is neither young nor slim—he owns two saloons—and his figure is anything but graceful. To attempt to pose him was hopeless, and in spite of what we are told about taking our sitters "natural," I was sure an unposed picture would be a dead failure. He just sat facing the camera, a fat hand, like a bloated starfish, on each knee and a born-tired look on his face. I saw something must be done, for the more I tried to pose him the awkwarder he became, and his pained look increased every minute; so I treated him to the children's method—the "instantaneous process"—and started him about last fall elections. He soon got excited, and I made several rapid exposures—the lens was wide open and I made several, lest some should be out of focus. I soon got him so wound up that he jumped on his feet and waved his fists, and I made another exposure. Fortunately I got two good negatives; he wanted them full length, with a pleasant expression. I made a careful enlargement from the best face, and with lots of retouching I made it to please him, and got a nice order from it and from one of the sitting ones. The standing picture was a failure. Of course, the man might have turned down my work, too; but he didn't, and I got the trade by judging my customer and guessing how the other man had made a mistake.

A few seasons ago a gallery two blocks away was to let, and it was taken by a travelling man who flooded the district with cheap coupons. He was open every day and all day, and he was prepared to supply thirteen cabinet prints for ninety-nine cents. My trade was scarcely likely to run after the new man, for in spite of what we are told, people can see the difference between ninety-nine cent and three dollar work; but I didn't believe in sitting still. I had just been to the convention, and I wrote to a dozen of the boys, including some that I didn't know personally. They all responded like good fellows, and I got a loan collection of fifty prints. There were some beauties among them, and my mouth watered with wishing I only could do as well. I hung my re-

ception-room with these and with a few of my own, and I sent out an invitation to every house of any size in the district. The invitation was a rough-edged, rough-surfaced cream card, about 4 x 5 inches, with the centre sunk and pressed smooth, and the invitation printed on the smooth part. I have not one of them left, but the words ran something like this:

A UNIQUE EXHIBITION.

Our reception-room is filled with choice examples of the highest attainments in ART PHOTOGRAPHY, loaned by the leading galleries in St. Louis, Chicago, San Francisco, New York, Boston, and Philadelphia. You should see the platinotypes and the new colored carbon prints. They are in the highest style of art, and they are absolutely permanent. It is an all-star collection from leading MEDALISTS. REMEMBER, you are WELCOME. THE STUDIO,
572 First Avenue.

The whole thing—expressage on loaned pictures, printing, advertising, mailing, and sundries—cost me about $60, and all the money came back. I don't think the ninety-nine cent man hurt me any.

A good many years ago I concluded that a first-rate young woman in the reception-room was necessary. Next to cutting down the quality of work, cutting down the wage at the order desk is the worst of policies; and when I have good helpers I believe in letting them know that they are appreciated. My present lady has been with me ten years. I could save twenty dollars a month by changing her, and probably I would lose forty dollars a month by the deal. To see her go to work you would think that an order was the last thing she was after; but she makes friends with everybody. She is always tactful in admiring a hat or a dress or a child. She keeps track of everyone who visits the studio, whether customers or not; in short, she has a head and uses it. It pays to keep good help, and it's a heap pleasanter.

I have a great fancy for always running some specialty. There need be neither risk nor cost in it, though I am rather apt to buy special appliances, and sometimes to drop money over them. Having a specialty doesn't choke off other work, but it makes people interested and brings them to the studio. Don't be afraid of dropping a leading line, when it doesn't lead any longer, and starting a new one. I am always using the latest things in mounts and frames. (I wonder if the mount-makers sigh for the days when mounts were either carte or cabinet, and were ordered in thousands?) But I alter the prints as well. Within the last seven years I have boomed platinotypes, carbons in one or two special shades, framed miniatures, bas-reliefs, specially vignetted full-lengths, blue platinotypes, and several other lines. More than one of them have proved failures, but I try something else. It is so easy to boom even a slight difference from the everyday thing.

I believe there is only one time to keep alive, and that is all the time. I'm always advertising, but I'm not always spending money on it, though I do pay out considerable hard cash. I don't see the cash come back most of the times, but I know it does come back. This is how I figure it: I always have the money when I feel an ad. is necessary, and I have money for business and living. If I quit advertising and went to sleep I should have no money for advertising, and very little for food or materials. The sum seems simple. A man to be alive need not be shrieking all the time. He can go along quietly. An ad. does not work forever. It is something like eating. I pay cash for a square meal, and in a few hours it is more cash and another meal. I cannot get along any other way. So it is with publicity. I spent five dollars last week on printer's ink. That has done its work, and now another five dollars must follow it; only it must be well placed, so that it won't fall harmless on top of the other, but will hit in a new place. That is the secret of specialties—they strike in a different place, and to make every blow felt is the secret of success.

There is just one other thing to mention—the showcase or window. I have a fair-sized case, but whether case or window it should be kept clean. Mine cost me a fair price, and it is as near dust-proof as a case is ever likely to be; so all needed is to clean the wood-work occasionally, to clean the outside of the glass every day and to clean the inside of the case every second week, when I change the prints. An untidy or an unchanged window means that people walk past without noticing it. They stop to look at a clean, fresh display.

THE GUM-BICHROMATE PROCESS.

BY CHARLES MOSS.

It is a curious fact, and characteristic of that delightful freedom associated with the gum-bichromate process, that the methods adopted by different workers vary so widely, and though each one may have his own formulæ and his own rules, they are his own, having been made and formed by him on the basis of a past experience of many failures.

It is, to a large extent, in this freedom, in this absence of arbitrary rules laid down by scientific lawmakers, that part of the charm of the process lies, and there are so many factors that have to be taken into consideration that an alteration in any of the conditions frequently leads to unexpected results. So, as his failures are the foundations of his success, slowly and by degrees the gum-worker builds up his knowledge of the process, and in due course he is able, by altering the quantities of the different constituents of his mixtures and by varying the exposures to light, to keep the process under control.

After a long and frequently painful experience I should strongly advise those of my readers who are lightly thinking of "starting gum" to pause and consider whether they have yet got the best their negatives can give them in the ordinary and more mechanical photographic processes. If, however, they are not satisfied, or if they feel they want more control over their picture than they can get in the ordinary way, then by all means get to gum at once, and I can promise them that, although, if their experience is like mine, they will have plenty of worry and not a few failures, photography will give them a new pleasure, a feeling of "power" and of control over their work to a far larger extent than they have ever had before. There is no flashing up of the picture, for good or for evil, as when we place a platinotype in the developing tank or the utterly helpless sensation as when we pour the developer over a bromide enlargement with a muttered prayer that things may come well; but there is instead the slow building up of the picture, over which we can spend days, or, if we like weeks, with the knowledge that any mistakes we make while developing can be rectified in subsequent printings, and when it is finished we shall feel that we have had, in some way, more to do with its production than with any of our prints by other processes.

It is not my purpose in this article to lay down any rules for the guidance of gum-bichromate workers, but to describe shortly some of the means I adopt in working. I do not claim that they are the only means or the right means, but a description of them may be of interest to those who are "young in gum." First, then, as to the materials. These consist of paper, gum, sensitizing solution, pigment, brushes for coating, and the usual dishes. Almost any paper may be used, but there is a difficulty in coating a very smooth paper, and the beginner should start with papers of a moderately coarse surface. Whatman's drawing papers are suitable; Michallet paper has a beautiful surface to work on, but it has some very pronounced regular lines which are rather awkward. Allongé, another French paper, can be used on either side, and has a very suitable grain. Some papers are too porous and absorb the pigment too readily, making it difficult to get pure lights. This tendency is, of course, sometimes useful, but if the worker wants his lights pure he can, by a preliminary sizing with a weak gelatine solution, overcome the natural tendency of the paper and keep his gum and pigment on the surface.

The most important item in the gum worker's dark-room will be the Badger Hair Softener, and as it is the most important it is the most expensive. I am glad to say I have forgotten how much I paid for mine—it was a price I did not want to think about too long—but as it has lasted me a good many years the price per print is no doubt infinitesimal. I work with a four-inch brush, but for small work a much smaller brush will answer the purpose equally well. The other brush required for coating is a small, soft, flat

brush about two inches wide. As long as it is soft and flat it does not matter much about the quality.

Now we come to the gum, and I will give one word of advice here. Always work with the same kind of gum. It is not necessary to buy the best as long as it is gum arabic in lumps, not powdered. As a matter of fact, I use a cheap quality, and get on better with it than with the better qualities, which, in my hands, behave in a variety of extraordinary ways, as if they resented being made use of by a photographer.

For pigments the beginner should commence with lamp-black, of which he can get quite a large quantity for a few cents from the nearest colorman, and he can go in for other pigments when he likes, such as red ochre, sienna, umber, vandyke brown, etc.

A bottle of a 10 per cent. solution of bichromate of potash and a palette knife will complete the outfit, no special dishes being required.

Now we will proceed to coat a piece of paper. In the first place we have to make our gum solution, and this we do by weighing out 1 ounce of gum arabic, putting it into a saucepan and pouring onto it 2½ ounces of water—that is, the proportion of 4 of gum to 10 of water. The gum is then dissolved by gentle heat, and when you are not in a hurry it is better to let the gum soak for some hours before applying the heat; but it does not matter much. When dissolved, the gum solution should be strained through fine muslin into a bottle, which must be afterward well corked if the solution is to be kept for a few days. It is ready for use, however, as soon as it is cold.

We will suppose we are going to coat a piece of paper 30 x 20 inches. We pour into a measure half an ounce of the gum solution, and we weigh out 10 grains of lamp-black onto a stone slab or a piece of ground glass. I use an old piece of opal glass originally bought for squeegeeing carbon prints for double transfer. A small quantity of gum solution, such as would cover a shilling, is poured from the measure onto the pigment powder, which is then ground down with the palette-knife into a paste. This operation will take two or three minutes, but should be continued until the gritty sound caused by the larger particles of the powder is no longer heard. The paste thus formed can then be taken off the glass with the knife and transferred to a small cup or a deep saucer, and the remainder of the gum solution poured onto it from the measure. Half an ounce of the 10 per cent. bichromate of potash solution is then added to the mixture, and the whole is stirred until thoroughly well mixed. This is best done with the small brush referred to above, and with which we are going to coat the paper.

The next operation—the coating of the paper—is the one which will require a little practice, but it is easier to carry out than to describe. Take a brushful of the mixture and brush it over the paper, which has previously been placed on a board and secured at each corner by a drawing-pin, in even lines, working from side to side and then crossing from top to bottom. Do not be afraid of putting too much on at this stage (a piece of paper 30 x 20 inches will require nearly the whole of the mixture you have made). It will take longer to finish, but it will be easier to finish well. As soon as the paper is thoroughly covered take the badger-hair softener, and by gentle light strokes in all directions endeavor to distribute the coating fairly evenly all over the paper. After a few seconds of this work you will find the softener has taken up a quantity of the gum, and I prefer to wash the softener at the tap, thoroughly drying it afterward on a soft towel. On returning to the paper you will find it has expanded. Take out the pins and straighten it, and then repeat the operation with the softener, gradually getting lighter and more gentle with your touches, and instead of drawing the brush across the paper use it rather as a stippler, holding it lightly, as you would a pen, and using your wrist only in working it. At first the coating will look as if it never would become smooth and regular, but patience and a little practice will bring it to the proper condition.

Another method of coating is to soak the paper in the first instance in the bichromate solution, and after it is thoroughly dry coat with the mixture as described above, except that in this case plain water must be added to the gum mixture instead

of bichromate. This preliminary sensitizing of the paper entails, of course, an extra operation. The advantages claimed for it are that the paper so treated prints more quickly and the pigmented gum leaves the paper during development more readily. I work, however, in the way first described. It is less bother.

Printing is carried out in the usual way with an actinometer, and experience provides the best guide as to the depth of printing required. It is a common fault with gum workers to overprint. The process gives the best results when the printing is only just sufficient to prevent the gum from "running" on the print when hung up to dry after development. As a rule, the exposure to light has been sufficient when, viewed by transmitted light, the print shows signs of darkening in the deepest shadows.

Development is conducted by placing the print face upward in the first instance in cold water, avoiding air bubbles. After a second or two the print should be taken out and carefully returned to the water, face downward, where it is allowed to remain as long as necessary. After a few minutes it will be found, on holding the print up by one corner, that the coating, where it has been protected from the light, is beginning to run off, and the print should be allowed to remain in the water until the image is distinctly visible. There will probably be a thin veil of pigmented gum over the whole print, except, perhaps, in the very highest lights. The print should then be hung up to dry, for if the exposure has been approximately correct the surface will be too delicate to stand brush work, or even a spray of water, at this stage. After it has dried, however, it can be soaked again until the film is sufficiently softened to be worked with a brush. It can then be placed on a piece of glass or board and the brush brought into requisition.

This is the stage where the worker can work his own sweet will. Up to this point he has been to a great extent the slave; now he becomes within limits, of course, the master, and with an assortment of brushes, a pad of cotton wool, a pointed stick, his finger, or any other implement that occurs to him as being suitable, he can so modify his print that its own negative certainly would not recognize it. But here also is the danger. This handwork must be guided by knowledge, or the result is, of necessity, nothing but a display of ignorance.

So much for the simple working of the process. I now propose to deal with certain modifications which I adopt in my own work, but in describing them I wish it to be distinctly understood that I do not give them as being necessary, but simply as the means which I have found give me the best results.

The greatest difficulty I have met with has been a certain deadness or muddiness in the print treated in the simple way described above; and although this has not been so apparent in those prints in the making of which pure black has been used, it has been very apparent when I have tried to get brown and sepia. There has been a great want of depth and transparency in the shadows, and I have to confess my inability, by any method of single printing, to overcome this defect.

It is possible, however, to build up the image by successive layers of pigment until a range of tones from the deepest dark of the pigment used to the highest light of the pure white paper is obtained. Many of my prints in this way have five or six coatings, and the method of procedure is as follows:

Coat the paper exactly as I have already described, and, when placing it in the printing frame, mark the back in some way, so that it can always be again placed in exactly the same position on the negative. Print as usual and develop, being careful when using the brush or other tools not to rub away the surface of the paper, or you will find that the next coating of gum is likely to stain the paper where you have done so. When the print has been thoroughly dried it can be recoated and reprinted, and development is then carried on as before. If some of the pigment has been removed in error during the first development, the fault can be rectified at the second working, and by successive coatings and printings an enormous amount of power is given to the photographer, especially in respect of the control of values and the obliteration of undesirable details. The last two or three printings may be

used simply to intensify shadows here and there, the remainder of the pigment being entirely removed.

When more than one printing is required it is advisable to use a good paper; otherwise it will be found difficult to get a true register, owing to shrinkage.

Even after successive printings it is very often advisable to "bring up" the shadows with a coat of varnish, and in my experience there is nothing so satisfactory as a coating of a solution of gum after the print has been mounted. It can be applied weak or strong, according to taste, and relieves the print from any dead appearance it may have.

I have not touched on many modifications of the process, such as varying the strength of the gum, the quantities of the pigment, the length of exposure, etc.; but the gum-worker will find from experience, when he makes some mistakes in any of these directions, what a variety of results he will get, and it will be an easy step for him to profit from his errors and use the knowledge he so gains for his own ends.

There is a golden rule which should be deeply impressed on the mind of every gum-worker, and which should never, be the temptation ever so strong, be broken: *Accurately measure and weigh the ingredients of your mixtures.* Neglect this rule and *guess* at the quantities of gum or pigment or bichromate, and your prints will at once begin to play tricks with you.

Some few months ago some articles by Mr. Foxlee were published in one of the photographic papers, giving particulars of a method of obtaining prints by the gum process, by which the paper was first sized with gelatine or starch, then sensitized and printed. After washing, it was coated with a gum-pigment solution and afterward developed. The process is based on the fact that one colloid substance, having been sensitized with bichromate and exposed to light, has the property of transmitting the action of light to another colloid substance brought into contact with it.

I have had no opportunity of trying this method, but the only advantage I should suppose it to possess over the ordinary process is that the worker is enabled to watch the action of light on the print, and so exercise a greater control while printing. On the other hand, the process seems to be a more tedious one, and the number of operations to be carried out would, in my view, prevent its adoption, unless it possessed other advantages over the old method than that mentioned.—*Amateur Photographer.*

Sanger Shepherd & Co. have issued a booklet briefly describing the color process on paper which Mr. Sanger Shepherd demonstrated before the Camera Club recently (described in our January issue). Within the same covers will be found full particulars as to the price of materials. It is necessary to possess a license before practising the process, which license is granted with each outfit of materials, and the following conditions are stipulated for: (1) Negatives must be obtained by the use of Sanger Shepherd filters; (2), the materials purchased are for private use and exhibition only. Renewals of any of the materials in the outfit can be obtained only on presentation of the original license or register number. Licenses to work the process for purposes of sale or exhibition will be granted to professional photographers on special terms. Outfits comprising the requisite materials are sold by the manufacturers in quarter-plate, half-plate, and whole-plate sizes at 20s., 30s., and 40s. ($5, $7.50 and $10) respectively. Further particulars can be obtained from Sanger Shepherd & Co., Gray's Inn Passage, Red Lion Street, Holborn, London.

Mahomet and the Mountain. This is the title of an attractive little booklet issued by the Bausch & Lomb Optical Co., Rochester, to explain the function of their telephotographic lens attachment and to advocate its use. As the mountain would not come to Mahomet, Mahomet had to go to the mountain; but it is shown that a telephotographic lens will bring the mountain quite near. The prices quoted should popularize the telephoto attachment for hand cameras.

The Aristo Eagle says: If you are successful in your business you are liable to be vilified by your unsuccessful imitators; don't mind it. "A barking dog never bites."

By F. W. Voorhees, Albuquerque, New Mexico.

PORTRAITS OF WOMEN.

BY JOHN A. TENNANT.

THE first portrait made by photography was a portrait of a woman. Ninety per cent. of the work done by the professional photographer comprises pictures of women and children. This proportion has been maintained since photography began, and will doubtless persist until the end. If women and children were photographed as rarely as men are, three-quarters of those engaged in photographic portraiture as a profession would have to seek some other means of livelihood. We have considered children as subjects in the last two numbers of the MAGAZINE. Let us now give thought to women from the same viewpoint.

Taking the facts above stated as indisputable, one would naturally suppose (1) that the photographer would devote particular study to the possibilities in women as subjects for his art; (2) that the disproportionate amount of practice expended on women would make the photographer pre-eminently skilful in this special field and (3) that he would give considerable attention to women from a business standpoint.

Does he? Indirectly, yes; intelligently and persistently, no. The average photographer accepts the facts as stated, and lets them go at that. He knows that the majority of his customers will naturally be women, because of human nature. Women are naturally graceful, and, of themselves,

strive after pictorial effects; hence, they are easier to handle, and make more pleasing pictures than men. The photographer naturally desires to please his customers,

By Randall Studio, Ann Arbor, Mich.

and for his women customers as naturally does his best as far as his abilities go. But I hold that women deserve more than this. I am just as certain that women will appreciate and pay for all the consideration the photographer will give them. As a class they are sorely neglected by photographers.

Let us take New York, for example. One cannot pass through the city's streets day by day without noting the preponderance of beautiful women. But look through the display frames of the city's studios, and you will willingly agree with the ungallant San Franciscan when he says: "Your New York woman is 'nothing extra' in the way of beauty." I have observed this for years. Our women are beautiful beyond question. Our photographs of women are utterly inadequate. You can wander up Broadway or Fifth Avenue and hardly see a photograph of a woman worthy of a passing glance.

What are the faults? Bad composition and lack of grace chiefly. Beauty is always interesting. These portraits fail to interest because they lack the attraction of beauty. The average photographer does not yet seem to have learned how to pose

By F. G. Schumacher, Los Angeles, Cal.

a woman so as to express the grace and beauty—the grace of manner and movement, the beauty of form and draperies—with which nature and art have endowed

her. And there is usually even less skill seen in the arrangement of the figure and its accessories within the picture space—the composition of the picture.

By E. J. McCullagh, Stockton, Cal.

With women the three-quarter or full-figure pose is generally most desirable, but considering the abundance of opportunity we do not see that profusion of figure-portraits of women which one would naturally expect. And much more rarely, indeed, do we see a pose which has not some obvious and easily avoided defect. Women have more natural grace than men and less awkwardness of carriage ; their draperies, too, offer a more pleasing variety of lines than is possible with masculine dress. Moreover, it is much easier to give a woman something to do which will supply motive and interest in a portrait, beside enabling one to secure grace of action or harmony in arrangement.

The most common fault in portraits of women is the too obvious pose. This is generally expressed in a nervous or conscious strain after attitude. The first element of success, therefore, must be flexibility, the relaxation natural to the figure when it is unconsciously easy. Where this nervousness is observed a good plan is to occupy the subject with some phase of action natural to a woman, as, for instance,

By Mrs. S. Condon-Hendrick, Atlanta, Ga.

the arranging of flowers, the "picking up" of the skirt, the opening of a parasol, and the like. In this way by seizing an opportune moment one may secure anima-

tion and grace of line in the figure as well as naturalness of expression. The moment of arrested motion may also be used to secure an animated and characteristic pose, as when a woman turns to greet a friend entering her room, or inclines the figure to take up something from a table, to arrange a lock of hair at the side of the head, etc. In all these details wherein we have pleasure in daily life a portrait may be had which will possess an easier grace than any formal pose.

By F. Ernst Zimmerman, Boston.

It will often happen, however, that a more or less formal pose is desirable to exhibit the figure or the costume. In such cases the pose depends upon the peculiar charm or beauty of these features. It may be that accessories will be needed to help out the lines, but these must be used skilfully because of their influence upon the proportion of the figure. For instance, in a standing pose of a woman under the average height, a low-backed chair of slight width and with long lines will add height and grace. The softly outlined, flowing folds of a curtain behind the figure, barely more than suggested, will also give the desirable appearance of height, or the subject may be made to stand (if it is accomplished without loss of ease) upon a very low footstool or a book placed upon the floor. This latter device is generally adopted where the costume has a train or is of unusual length. The very common habit of permitting a space of several inches between the bottom of the front of the dress and the floor in standing poses should be avoided; it depends very largely upon the way in which the subject stands. Where the skirt itself is short a sitting pose should be chosen. The standing pose is undoubtedly the best with most women for showing the figure and costume to the best advantage. Stiffness, when it is apparent, may be obviated by giving the figure a slight turn from or toward the light.

The profile of the figure, with the head turned to the three-quarter view, generally gives a graceful pose; in handling a plump figure in this manner, however, vertical lines near to the subject should be avoided as accentuating the curves of the figure in a disagreeable way. If the subject shows a costume with unusual fulness at the shoulders or bust, it is well, where possible, to make use of the hat to give proportion to the head, which might otherwise appear insignificant. Similarly, where the hat gives the head undue proportion, the sitter should be persuaded to remove it.

The principal lines of the pose should always be disposed so as to lead the eye around the figure, with the head as the chief point of interest. Abrupt angles, I need hardly say, should be guarded against, and the "line of grace" adopted for the general direction of the predominant lines through the figure. The forms of composition indicated are, of course, the pyramid or the use of the "decorative line." When the pyramidal form is used care must be exercised to see that the centre of

gravity falls within the pyramid or the figure will be unbalanced and appear as if ready to fall over. The alternative method is advantageous when the figure is in any other than an erect position; in its use a sense of balance is the essential thing to be secured after grace.

In both standing and sitting poses the carriage of the head has great influence upon the success or failure of the portrait, altering its outlines in a remarkable way both as regards proportion and general effect. The lines formed by the dress when the subject is seated offer considerable difficulty in their harmonious arrangement, having a tendency to fall into triangles the apex of which is indicated by the knees. This difficulty may be obviated to some extent by selecting a chair of the right height for the particular subject—*i. e.*, one which is neither too high nor too low, so that the knees are not elevated. The sitter should also be seated well forward, so that the legs are bent at an acute rather than a right angle; in this way the folds of the skirt will fall more freely. The practice of drawing the dress tightly about the lower part of the body, showing the form of the hips and figure, cannot be too harshly condemned. In like manner, a standing pose is often seen in which the hands are joined over the lower part of the abdomen, this latter catching the light and so being made more prominent because it is framed by the arms. A similar fault is that of seating a woman in *décolleté* dress too low, or inclining the body too far forward, so that the shoulders and bust are displayed in a way bordering upon vulgarity.

The most troublesome feature of the figure-pose, however, is the disposition of the hands, about which women are sensitive to a degree. In consequence of this we find in looking over a number of portraits of women that the hands are most often conspicuous by their absence. Sometimes they are placed behind the back, or hidden under the pages of a book, or fan, or among a few flowers; at other times they are hidden in folds of the skirt, or by a cape. When shown, the general complaint is that they are too large, a notion which has some foundation in truth, but also largely the result of the invariable practice among painters to represent the hands smaller than they are in life. There are various ways of meeting the difficulty, the best of which is to make one's self thoroughly familiar with the hand, its anatomy, its expressiveness, its varieties of arrangement and most graceful positions. Very much depends

By Davis & Sanfard, New York.

upon the lens and the distance of the hands from the point or plane of the principal focus. If two photographs of a hand are made, the one with an eight-inch (focal length) and the other with an eighteen-inch lens, the difference in result will explain the influence of the lens in a startling way. That the hands increase in apparent size and awkwardness of proportion according to their nearness to the lens is a matter of common knowledge which does not receive the attention it deserves.

By G. Oury, Brussels.

In the treatment of the hands the first rule should be to avoid showing their full width, or, if they must be so placed, to see that they are so lighted or modelled by shadow that their apparent width is lessened. Sometimes one hand may be completely in half-shadow with advantage. When a head, for instance, is posed leaning upon one hand, the effect is much better if the hand be against the dark side of the face and thrown into shadow by the head; and when the hands are not placed close together, so as to make a group in themselves, it would, I think, always be better to subdue one of them somewhat by shadow.

As we have in hands a repetition of the same form several times in the fingers, we must endeavor to vary them somewhat. When the fingers are extended straight out and held close together, the effect is stiff; and if they be kept straight and spread equally, the result is a sprawled, awkward look. When the hand is open, three fingers pose together better than two, and some of the fingers should be drawn up, but not all equally. A completely doubled-up hand is not good—it is too like a fist; but a pose in the position of holding a pen or pencil, as when writing or drawing, is one which looks well from many points of view. A very bad arrangement of the hand is when it is held flat and the fingers doubled up to the second joint; the squareness of the form and the impression of the ends of the fingers being cut off are very unpleasant. Again, the hand very much doubled up, but the index finger fully extended, is an arrangement which looks exceedingly awkward from several points of view.

A graceful pose is to bring the thumb and second finger slightly together, with

C. E. Fry & Son, London.

the remaining fingers slightly raised. In this position turn the hand in any way you choose, and you will find agreeable lines, which will need but little correction to appear pleasing. The wrists as well as the arms will play important rôles in the composition of lines; but can be mastered with very little observation.

When the sitter is a person of education or refinement it will often be noticed that the hands naturally assume a graceful position. Where this is observed the natural arrangement should be accepted. It is always the most characteristic when unconcerned, and drawing the attention of the subject to the hands will almost invariably result in awkwardness.

In small groups of two or three people—intimate friends or members of a family—a pleasing arrangement is not so difficult. They may be interested in the reading of a letter or book, or engaged in conversation or occupied with the antics of a child. Small groups of young men or young women are also easy to manage, because they may be occupied in something of common interest. When the lower parts of the figures present difficulty, the seating of the figures at a table will obviate the difficulty. In such pictures the form of

C. E. Fry & Son, London

the composition may be pyramidal, or we may simply seek a well-balanced arrangement and variety of line in the position of the heads or in the figures.

Beware of confusion of interest or too much complexity. The figures should not be too close together, nor the combination too large for the space it occupies, or the effect will be unpleasant. Sometimes the horizontal form suggests itself, as in a group of three children, of which the half figures only are shown. In such a case the figures can be made to overlap each other, especially with children, but great care is needed here to secure a graceful outline of the heads. Speaking generally, a convex outline is preferable in all groups as giving solidarity, boldness, and grace. This line need not depend upon the figures, but may be secured by draperies or accessories, which, however, are not to be used unless directly helpful. Angles, and especially right angles and parallel lines of heads, are to be avoided, since they disturb the eye and prevent it from uniting the various parts of the group, which is essential to its unity. The heads are always the chief points of interest, and their relative position is the most important factor in the success of the group. They should not be so placed as to form any regular or geometrical pattern, nor placed directly above each other. Very little differences of position are important here and will give pleasing variety. The lines connecting the figures composing a group should be as simple and as graceful as possible. Thus a harsh, horizontal line between two figures will give the appearance of separation rather than of unity. Repetition of the same line or curve will sometimes be useful to convey a sense of unity obtainable in no other way. Converging lines should be avoided, unless there is some point of special interest at their convergence, as they will concentrate interest there.

There should always be a sinuous line connecting the figures so that none may be isolated and the effect of unity be lost. Similarly whenever it is possible to express action in a group, this opportunity to supply interest to the composition should not be passed unheeded. In group composition there is abundant room of variety in pose and effect, the common purpose giving completeness of interest. Thus two or three young women may be arranged as if discussing a design in embroidery, or chatting over a friendly cup of tea, a

By A. L. Jackson, Tacoma, Wash.

"property piano" is very useful where such small groups of women are frequent and presents opportunities for many effective compositions.

I had intended to deal with women as customers, but we must leave that branch of the subject for another article, as these notes have already exceeded reasonable length.

A VISIT TO MRS. KASEBIER'S STUDIO.*

BY R. CHILD BAYLEY.

"How do you like America?" said Mrs. Kasebier with a cheerful laugh, as we stepped out of the elevator into her flat at the top of a house on Fifth Avenue, New York. We explained that our impressions had not altered for the worse since we were first asked the question—about ten o'clock one night, when our personal knowledge of the United States was limited to the view of the Nantucket light about ten miles off on the starboard bow.

So this was the reception-room, work-room, studio, *et hoc genus omne* of the first professional in America (and, *therefore*, in the world, we had nearly added, for the American attitude is catching). There was really nothing to see. A chair or two, a few screens, patternless and of a quiet, greenish shade, on the walls some framed photographs, were all that could be seen. There *was* a skylight, it is true, but it looked as if it were there to light the room in the ordinary course, and had none of the home-made greenhouse air that such lights often present, even in elaborate studios. The place was in perfect taste. Its atmosphere was quiet; there was as little suggestion of Waltonian *delirium tremens* art as there was of mid-Victorian decoration. The usual paraphernalia which one associates only with the photographer, the Inquisition, and the dentist, were not to be seen. Mrs. Kasebier *is* a photographer. We have handled her negatives, and very good negatives they were; so, presumably, she uses a camera, but she does not keep it very much in evidence.

Those who have never seen the subject of this sketch may be interested to learn that in personal appearance Mrs. Kasebier is of medium height, alert and active in figure, and intensely earnest in expression; while in years—well, *Miss* Kasebier has all the charm we associate with the later teens.

We received a kindly welcome of the sort which seems commoner in America than in England—one of those which put the recipient at ease and *en rapport* almost in a moment. We had not been in the studio five minutes before our hostess had yielded to a pressing invitation and brought out a whole pile of prints—not exhibition work, but simply spare copies, in every case, of actual professional portraiture, such as she is now doing at the rate of £1 per print, with a minimum of £2. [We are reliably informed that Mrs. Kasebier's minimum charge is $25, which covers four prints.—Ed. W. P. M.]

Mrs. Kasebier at these prices has all the work she can very well do, so that it is clear that there is a strongly appreciative public in New York for the best that modern photography can do. Certainly, such photographs would have little or no sale in London. Before that could be the case we should have to take hold of the public and educate them in portraiture in the same way that we have educated them in landscape. Here is a task which the Linked Ring may well set itself; though we warn it that it would take up much of its energies for a pretty long while. Still, we cannot help thinking that it would be well worth doing.

But to return to our subject, which, by the way, is Mrs. Kasebier, and not Mrs. Kasebier's work. It is not much use publishing here in this place a criticism of prints which we cannot reproduce to give any idea of the originals, and most of which our readers will never see. We will "just say right here" that the prints—some in a low key, some in a high one—were so attuned for some special reason in each case, and not merely haphazard, as some of the less well-informed workers seem to think.

"Now, here is a man," said our hostess, "who had a fine, strong face, rather lumpy or knotty, who cannot get a good likeness in the ordinary way at all." The sitter had evidently a lot of color, a big but thin beard, and a high dome-shaped bald head. To realize the "usual thing" of him was

* Extracted from a series of papers by the editor of *Photography* (London), giving his impressions of things photographic in America, following a recent visit.

easy. He was almost the typical deacon or sidesman in a small provincial town. Mrs. Kasebier took him with a very flat lighting, just sufficient to show the modelling of the features without emphasizing them as if they were one of the raised maps of Palestine of our boyhood. The only true high light was the patch of shirt front; it saved the picture from being flat, but, nevertheless, left it with all the advantages of flatness.

We could run on in like manner about the others. Dozens and dozens of prints were put before us, each characteristic of the photographer, each the best that she could do, each manifestly catching and conveying the very spirit of the sitter in a way we have seldom seen equalled by any one—and all these done "in the usual way of business." In its way, it was as wonderful as the mammoth buildings of the city, and infinitely more pleasing.

We saw the dark-room—we wish Mrs. Kasebier a more roomy and pleasant one—we saw two young ladies trimming and mounting prints "in the American style," and each in the way selected for it.

A casual remark of ours about hands brought out half a dozen big sheets of paper on which were mounted in succession hands, and nothing but hands—the hands of a poet, a coquette, Mark Twain, a laborer, a plutocrat, a civilized Indian, a musician, a political economist, a playwright, an actor. "There is far more to be seen in hands than many people think. Look at Mark Twain's hands," said Mrs. Kasebier, "one can see in them alone the enervating effect of European luxury upon the once energetic, nervous American. You Europeans have quite spoiled him."

Second sittings, we learned, were not often necessary, nor were the results, as a rule, an improvement. The sitters, in nearly every case, were satisfied and pleased with the photographs taken at the first. As a rule, the high prices which Mrs. Kasebier asks and gets prevent the work from being distributed broadcast, but for special purposes—for family keepsakes—the baby, the bride, the old grandmother, are recorded by her camera as they really are, in a way which will give the prints enduring interest.

"Now, there is one more request," we said before leaving; and Mrs. Kasebier complied with it and brought out some boxes of her negatives. It would do those good who talk of "the cult of the spoiled print" just to see a few of them—not for their pictorial merits, but to use them as examples of technical excellence to work up to. We have never seen more beautiful specimens of the capability of the modern dry plate, when intelligently used, to reproduce gradations truthfully than in the dozen or two brought out haphazard by this gifted lady.

But dusk had come on. The studio closed at six, and we had to leave. We were soon in the flare and rush of Fifth Avenue again; and the thought that among the brilliant New York society which passed along there was a public that could appreciate Mrs. Kasebier gave it quite a new lustre in our eyes.

ART AND PHOTOGRAPHY.

BY JOHN H. RAFTERY.

THE caption, "Art and Photography," will do, because, just now, as you have noticed, there is a wide discussion as to whether the pictorial art is to be dominated utterly by the camera. But, in a general, and, perhaps, rambling way, I wished to apply to the relations of other arts and crafts the same deductions that must be made between the comparative values and meanings of photography and the pictorial art.

Being well aware of the high degree of perfection to which the modern photographic lens and its auxiliary equipments have been brought, we must be yet far from an adequate appreciation of the advance of photography unless we reckon with the development of that special talent, amounting almost to genius, that enables the operator to catch in colorless but convincing details the instantaneous presentment of the exact physical appearances

and conditions of men and things. It is, I believe, agreed of all experts that Mr. Matthew J. Steffens, of Chicago, and Mr. J. C. Strauss, of St. Louis, are *par excellence* the absolute masters of photographic portraiture in the United States. (*Pace*, Pirie McDonald, Miss Ben Yusuf and some others of high and wide renown!)

It is admitted that either of these two pastmasters of the craft can come nearer to perpetuating the momentary and absolute presentation of a human face than any of their calling. But—and I submit the proposition candidly to those who know something of the value of invisible truths—neither Mr. Steffens' nor Mr. Strauss' instantaneous limning of a face, or form, or expression, can be lastingly artistic and characteristic of the subject, for the simple reason that the character, the portraiture and the psychic attitude of no man or woman can be seized at once, or in any given moment.

Art, as it is understanded of the student, is not the exploitation of things exclusively material. The value of an interpretation, whether in sound, form, color, or suggestion, is, from an artistic point of view, more in the intangible and spiritual expression of truth than in the fidelity to mere physical detail. The great masters of portraiture have required of their subjects frequent, tedious and almost interminable sittings before they were willing to put forth what they would call an adequate example of their art. They may have been themselves ignorant of the inherent motive which prompted this assiduity, but, in the last analysis, it was consequent of the artists' truest and most essential inspiration, viz., a desire, amounting to necessity, to seize and corner, with brush, mallet or strings attuned, the Divine essence which is as vitally a part of us as the texture of our flesh, the bones of our anatomy or the color of our hair.

Imagination may supply the lack of color in the photograph; in the case of familiar faces or scenes, knowledge and fancy may yield the expression of vagrant, evanescent and peculiar moods. But for all that, the photograph, be it ever so well executed, can never ring lastingly true to the observer who knows that the life, and the truth, and the influences which make men and women and things what they are, cannot be told in the mechanical limning of a momentary appearance before a plate which, no matter how "sensitive," is yet a product of chemistry, without life, without soul of its own, without the patience to wait and watch for those manifestations of divinity, of passion, of whim and mood, that are as necessary to the truth as the "rag," and the "bone," and the "hank of hair."

And, mark you, it is granted that the camera can outdo all artistic skill in the reproduction of visual details. So, with an impact of attuned strings, can the pianola excel, in final and unquestionable accuracy, the most finished precision of the trained pianist. Yet it is this insistant, infallible, and annoying accuracy which offends and outrages the ear of the man who hears in music the soul-voice, the laughter and the tears of imperfect man, the interpretation of inexpressible passions by hands that are warm with the red, inconstant blood that is best, most poignant and truest in its convincing *lack* of sustained and inhuman mechanism.

Take "La Cigale" standing naked, forlorn, beautiful in her friendless sorrow, with the chill winds of autumn drifting her dew-wet hair, and the tear trembling in her glorified, agonized eyes! Can you give me a photograph of Cigale? Cigale of the yellow-ivory skin, of the tremulous, red mouth, of the sob-shaken bosom, of the utter desolation of a woman who, in the heyday of her youth and beauty, laughed and sinned with man? Or have you seen some photograph of a space in the primeval woods where the green haze of a clearing was palpitant with the movement of the furtive god that fled at your approach? Do you know Corot's mornings, with the tears of night aquiver on the reeds, and the fogs fading like sad dreams and old longings before the sun—reality? You have seen photographs of women with all the lies of their lives suggested between the dimpled smiles of a second's pose before the camera.

I think not.

What is there in the hand-carved wood, in the voice of the violincello, in the sculptor's modellings, in the utter direction and pathos of the human voice in song or story? Do you like factory-made furni-

ture, the plaster-of-Paris atrocities of the peddler, or the foundry castings of ironmongers, or the automatic banjo, or the graphophone? Which do you like better, Paderewski or the pianola? Where heart and mind are concerned, which is better, a letter or a conversation? The mere matter may be well, even exhaustively, set forth in writing. But you do not know how the other looks; how each word, each syllable, strikes him? You cannot take his hand and look into his eye, or note the frown, the smile, the pallor, the blush, the shock, the sympathy that comes of spiritual proximity and the affinital telepathy of contact. The letter, the telegram, the telephone, the conversation! The photograph, the print, the drawing, the painted picture! The pianola, the piano, the wind instrument in wood (then brass), the violin, the human voice! Grade them like that, and you know why the sound of a voice is better for the touch of a hand; why the flash of an eye and the color of a cheek brings you nearer to the spiritual facts that are as real as the physical.

In the dominance of photography, in the popularity of mechanical musical device, in the substitutes for vocal and personal communication, in the duplication of plastic and carven ornamentation, I see only a ductile and ascending influence towards the supremacy of all art.

But art, *per se*, is apart from, and above, the laboratory, the forge, the mill, the factory, and all the inventions and contrivances which remove it from the initial and vital influences of the artist-craftsman. The beating heart, the vagrant fancy, the passion-inspired touch, the trembling, hesitant fingers, the sympathetic eye, the grief, the joy, the dream, the hope, the pride of the artistic human entity will never be replaced, excelled or equalled by the insensate mechanism which counterfeits and delays, but does not vivify, the strivings of a *man.—St. Louis Mirror.*

CLOUDS IN LANDSCAPES.

BY ROBERT MELVILLE.

THE time of clouds is coming. Clouds are indeed with us all the year round, but in spring and autumn we have them at their best. In our everyday professional work they are not a factor, saving only when they gather in sufficient density to give need for prolonged exposure; but in outdoor work, whether practised for pleasure or for profit, they need some consideration. In purely commercial work there are but two common practices: one, the white-paper sky, which is much rarer than it used to be; the other, the printed-in sky. The white-paper sky may fairly be considered as a thing of the past; and the printed-in sky is often very crude, or wanting in other ways. A falsely-lighted sky is a common fault, though the number of people who would notice such a mistake is comparatively few. The chief fault of a printed-in sky is its tendency to destroy unity. Too often, what should be a mere relief from white paper is magnified until the sky becomes the chief factor in a landscape picture. Pictures of clouds only are quite in order, as are photographs of beautiful skies; but in such pictures the landscape or foreground part, if any, should be quite subordinate. The obtaining of skies has been more or less an effort. Printing from two negatives is not difficult—except with development papers; but at best it needs care—just sufficient care to prevent the work being turned over to an assistant.

This added care, together with the difficulty of obtaining a sky quite suited to any particular negative, is a considerable handicap to a man who does not sell many prints, nor at a fancy price—it is quite sufficient to double the cost of production. I propose to explain when and how it is feasible to obtain clouds and foreground on the same plate.

We are told that a screen, usually a yellow one, is necessary for this work. This screen is a small piece of yellow glass, or of some colored transparent substance blown into a glass cell with parallel sides, and it is placed usually between the lens

and the scenery. Now the use of the screen is to "correct color." In a sky we have often white clouds on a blue ground; or worse, from a photographic point, we have clouds of all tints of gold, or red, or crimson, against this same blue. Blue is the most actinic of lights, red the least. The blue ground of the sky will utterly swamp any gray cloudlets—it will even overpower white ones. We shall have the blue utterly halating and blotting out the clouds unless we take measures to prevent it. A yellow screen is our method. Yellow and yellow make yellow; yellow and red give us orange; so the screen does not cut off these slightly actinic rays. But yellow and blue make green; and the blue light of the sky, passing through the yellow screen, becomes green. Green light is a little more actinic than red. As a result, the gradations—actinically considered—are reduced to a range which the sensitive film can cope with. Also, the intensity of the light being much reduced, the tendency to halation is minimized. We give a longer exposure to obtain a better result.

Orthochromatic plates are almost invariably useful in cloud work. No two bands of orthochromatic plates are identical; but, broadly speaking, it may be said that these plates are rendered sensitive to the green and yellow rays. They are not perfect plates—they do not see colors quite in the same relative intensities as does the eye—but they are a long step in the right direction. For much landscape work they are quite satisfactory. For cloud work they will still prove too sensitive to the blue end of the spectrum, and will still require a slight yellow screen.

To sum this up, in cloud photography we have too much blue—intensely actinic. We reduce the range of this blue in part by the use of a yellow screen, which changes the blue to green; and in part by using a plate which is much more than ordinarily responsive to the action of red or green light. With orthochromatic plates it is possible to use too deeply-colored a screen, killing all the light of the sky and translating it into a lowering thunderstorm.

If we examine a landscape through a light yellow screen we find its many colors become merged into yellows and greens—just as did the sky. If we use a color-corrected or orthochromatic plate we have a plate sensitive to these greens and yellows. With such a plate we may give the normal exposure for which the plate is listed by the maker, plus an increase to allow for the amount of light cut out by the yellow screen. This increase varies from one to three times the normal exposure. If we use too deep a screen it is possible to so cut down the blue of the sky that the sky is under-exposed when the foreground is fully exposed.

A screen must not be too light, or the foreground will be under-exposed; nor must it be too dark, or the sky will be too much held back. A few test exposures are useful when first using a screen, following the suggestions accompanying the screen or the plates, and making several exposures, each a slight increase on the former.

The key to success, as is so often the case, lies in the developing dish. In exposure we must give a sufficient exposure for the foreground and let the sky take care of itself. Or, rather, we must use a screen which will take care of the sky. Development must not go too far: it is a good, though not a necessary rule to slightly dilute the developer. If a correct exposure has been given in conjunction with a correct screen, the foreground detail should all be brought out by the time the sky has obtained sufficient density. If, however, the sky comes on too fast, don't let it get over dense. The foreground may be coaxed on by dabbing it with a pad dipped in strong developer—or the sky may be held back by dabbing it with potassium bromide. But, in any case, do not let the sky grow over dense. But to obtain a thin negative and afterward intensify it.

Voigtlander and I continues to delight those who buy it. A busy photographer writes: "I have snatched time to read Mr. Ryder's book and was surprised by its vivid interest and helpfulness. It has told me many things I wanted to know and, at the same tine, kept me laughing." Get a copy before the edition is sold out.

CAMERA EXPERIENCE.

BY AN ENGLISH CORRESPONDENT.

I HAVE never made a specialty of possessing cameras, but I own, or did own, two of them. One, alas! is cached deep in one of the few woods remaining in Western New York. Some day I will go and unearth it; but I much fear that the chipmunks will have been before me. I dread to find a nest snugly stowed away inside of it.

The second camera is a little folding kodak—on occasions an exceedingly useful implement. It has travelled thousands of miles with me when I have been unable to devote more than pocket-room to photography.

Some six months ago Jones approached me. He came a-borrowing. Smith was going out to China and had bought a pocket camera, English make, in all points like the American article, except that it was better all round. Would I lend him my kodak, just to practice with? His own camera would not be ready for a fortnight. Now I hate lending my kodak, but I hate more to turn down a proposition advanced by Jones—he is a good fellow.

A fortnight later I clamored for my camera, but Smith was in the country. His own camera had arrived, care of Jones, with a good stock of English films, so I made a temporary exchange. The camera was heavier than mine—British solidity—but in all essentials (except one) was a faithful copy of it. I loaded it and set to work. Four exposures were made, and then the key refused to turn. The key was obstinate—and so was I—and something gave way. I photographed no more that day, but in the quiet of the dark-room I found that the black-paper backing of the film had somehow caught, and in my efforts to move the key, I had ripped the paper right across. There was the broken end, a crumpled ridge of paper, which had effectually clogged the film. I returned the camera to Jones and longed for my own. Instead, Jones came round to see me. Smith, too, had found the lack of essential, and had quietly borrowed my kodak for his journey! Did I mind? He hated to miss the photographic possibilities of the voyage, and would return my camera, via parcel post, from Bombay or Singapore.

Jones is a good fellow, and I assured him it was all right; but I sent round to him to borrow a camera. He lent me a beauty. Seventy dollars it had cost, in 5 x 4 size—and that without the lens. It was, indeed, a beauty—its brass fittings would shame an optician's store. I set out with it and learnt that it was so loaded with special adjustments and movements that no one but a genius (I am not a genius) could work it. The plate-holders (I mean the double-backs) were the only things rigid about it—they stuck when I tried to draw the slides. For the rest, such was the collection of screws and struts and movements that it had unlimited facilities for breaking out in a new place. To work with it reminded me of the difficulties of focusing in a dark interior, plus the difficulties of copying, same size, with a cheap camera. I took train twenty miles to civilization—the civilization of a long-distance 'phone—and I rang up Jones.

"Say! How on earth do you work this confounded thing?"

"What's the matter with it?"

"Matter! I want to know if *you* can work it?"

I learnt that Jones kept it as a valuable possession. It was worth seventy dollars, without lens, and was the high-water mark of camera construction. But Jones didn't use it. He preferred a simpler instrument.

"For heaven's sake," I concluded, "send me a creature that will work. I don't care if it's a thirty shilling magazine camera."

Next day the camera arrived. It was an old one that Jones has had for a dozen years, with a lens capable of working somewhere around $f/11$. A plate affixed to it states that it was made in Rochester.

I mounted it on my tripod, and focused. I inserted the slide, drew the shutter, and exposed. Such was the procedure, and in due course I developed a negative.

Everyone on this side admits that the

Americans have a certain facility in turning out low-priced, machine-made cameras—we ought to know, for we use them. But everyone is prepared to take oath that, for a tour to the North Pole, or across Asia, or indeed for any purpose except personal use, the one and unrivalled camera is that beautiful structure of brass and mahogany, the creation of the highest type of British workman.

"PRINTS ALL ALIKE."

BY A PRACTICAL PRINTER.

In theory it is fairly easy to deliver a dozen prints, all printed to the same depth and all toned to exactly the same tint. In practice the printer is given to leaving a negative a few minutes too long, or, what is worse, taking it from the frame too soon. When a man is attending to a considerable number of frames it is not always easy to time each one to a minute, though unless he does attend closely to his work, he will have a percentage of spoiled prints, particularly if he is working platinotypes. The printing is, however, the easier half of the question; the greatest difficulty is to obtain uniformity in toning. Prints from negatives of different densities, or prints from the same negative made under different intensities of light are often difficult to match in tone.

The professional photographer is, however, seldom required to supply prints from different negatives which are absolutely identical in tone. Sometimes they are required for a composite picture or for a number of separate pictures in a single frame. If the negatives have been taken at different times and under different conditions it is not easy to obtain uniformity. Much can be done by rendering all the negatives as nearly equal in density as possible—hold back the thin ones by tissue paper or locally applied matt varnish. A considerable help is gained by printing four or six prints on one sheet of paper. To do this, cut the paper the size of six prints, and fold it—sensitized side outward, so that each side will take three prints. Fold it between sheets of clean hard paper, and press the crease hard down with the edge of a ruler. Two more folds will make it into a pad of six sheets. The first print is made on the end fold of one side; the second print on the central fold; the third on the last fold. There are now three prints on one-half the paper. They are folded inward, and the three folds of the other side are similarly printed. In folding paper like this, and in view of the fact that it will be several times handled, clean fingers and a minimum of fingering are prime necessities. The central fold must be slightly larger than the end ones, as these latter will alternately overlap each other, and the paper must always fold down flat and true. An advantage of this method of printing is that after the first print is made succeeding prints can be compared with it—a big aid to uniform printing. The chief advantage, however, comes in the toning. With four or six prints on one piece of paper, all printed alike, there is little risk of the toning resulting unevenly. A printing-frame should be chosen with the hinge not in the centre of the back, but near one end, as it will make it easier to examine the print.

Some workers have difficulty in judging when a print is correctly toned. If so it is well to work by a fixed standard of artificial light. Always keep the developing tray in the same place on the sink, and always judge the prints at the same angle of vision. It will soon be easy to tell when a print has reached the right stage. The moment this is reached drop it from the toning-bath into the water.

An under-printed print cannot be cured—the paper should never be taken too soon from the frame. If a print goes too far it can be remedied after it has been fixed. Wash it a few minutes extra, and then lay it in a weak bath made by dissolving a few crystals of ferricyanide of potassium in water. The solution should not be stronger than a very pale yellow. With a weak solution reduction will be very slow and even, and may be stopped the moment the right depth is obtained by transferring the print to cold water.

PHOTOGRAPHY AND SPORT.

FORTY years ago, says a writer in *The Field*, photography was almost entirely confined to the wet-plate process; but since then improvements have followed rapidly, until to-day a camera is almost as much a matter of course as a knife or a pencil case.

No public function, sporting incident, or, indeed, contests of any kind take place without the amateur photographer being at work; the Royal family indulge in the art, and it is only a few days ago that Her Majesty took several instantaneous photographs of some swimming and diving feats. In the old days, when a prolonged exposure was necessary, it is obvious that nothing in motion could be photographed, and it was probably the eagerness with which portraits of famous men, horses, and other animals, together with the representations of England's stately homes, were bought which, to a great degree, stimulated inventors toward discovering some quicker method of operating, for it was, no doubt, seen how great were the possibilities of photography if only men and animals could be taken in motion. That has now come to pass, with the accompanying result that photography has, in its present simplified state, become an interesting pastime to many who would otherwise have never sought to master it.

How far the widespread practice of photography has benefited sport is, perhaps, another question. A number of incidents are certainly given in the illustrated papers, but, as a rule, one horse in the act of jumping a fence is very like another, though, of course, occasions vary. One thing, however, that photography has done is to put an end to the absurd theory that horses, after jumping a fence, alight on their hind legs. Many snapshots have been taken in the hunting field and on the steeplechase course, and though, as we contended some years ago when a discussion arose on the subject, there is not a long interval between the fore-legs and the hind-legs coming to the ground, the instantaneous photographs show the hind-legs sufficiently high in the air to prove that the fore-legs must come to the ground first. It may be remembered, too, that a few years ago, in Australia, an objection after a race, laid on the ground of foul riding, was in a great measure sustained through the medium of an instantaneous photograph, which showed the actual position of the horses at the moment to which the protest referred. A good deal of discussion, too, has gone on concerning the positions of horsemen, and this modern photography enables us to ascertain, while it has also shown us how wide apart are theory and practice in cross-country riding. Every book on the subject, and every riding master by verbal instruction, has laid it down that, in the act of jumping a fence, the hands should be held low and the heels drawn back; but if we admit that the camera cannot lie, both directions are discarded, not only by the tyro when hunting, but by the professional steeplechase rider, for anyone who will take the trouble to look at the photographs which are from time to time reproduced in the illustrated papers of horses jumping a fence will see that in an alarming number of instances the rider's feet are thrust forward to the shoulders, while his hands are raised far higher than the instruction books dictate.

In connection with this subject it must not be left unsaid that instantaneous photography, for the first time, gave us an accurate knowledge of the action of men and animals in walking, and proceeding at an even faster pace. It was in 1881 that Mr. Muybridge, at the instigation of an American University, undertook an elaborate series of experiments in photographing moving objects, and invented the zoopraxiscope for the better representation of the results. This new and important departure threw a vast amount of light upon what had previously been a matter of speculation. Some artists, it is true, in delineating a galloping horse, placed his legs in curious positions, but the conventional attitude is one which, according to Mr. Muybridge, the horse never takes, that is to say, when his fore-legs are extended, his hind-legs are not behind him. The older painters did occasionally put their horses

into curious attitudes, and were really much nearer the truth than their critics supposed; while how little we knew even about the horse's action at a walk was shown in the discussion which took place concerning the horse in Lady E. Butler's picture "The Roll Call." It is not alone in sports in which the horse plays a part that photography has proved interesting. Just as an objection was sustained, as above mentioned, on the turf, so disputed races of other kinds have, to a great extent, been settled owing to photographs which happened to be taken at the moment. In boat races there is often considerable doubt as to the distance by which a boat actually wins, and at the conclusion of some of the University contests different opinions have prevailed, but when the illustrated papers have made their appearance it has been plainly apparent to all by what actual distance one boat beat the other or led at different points in the course.

In a similar way during recent years the aid of photography has been called in to give vivid representations of passing events. The funeral of the late Queen, the Coronation, the University boat-race, steeplechases, and some of the rides over a country indulged in by officers and men of Continental armies have one and all been presented to the public on the screens at different places of amusement within a very short time of their taking place. By their means the action, necessarily true to life, is almost as clear to the spectator as though he himself witnessed the performance. The first step toward this was, of course, the above-mentioned zoopraxiscope, in which, when the machine was turned round, the action of horse and man was seen in every detail. Nor has shooting been overlooked, for not only have we had instantaneous photographs showing the difference between the smoke produced by black powder and nitrates, but in his interesting book *Notes on the Rifle*, the Hon. T. F. Fremantle gives two plates showing a Lee-Metford bullet in flight.

PRACTICAL LENS NOTES FOR DEALERS.*

BY EXPERIENTIA.

ON THE RAPIDITY OF LENSES.

An experience of some years behind the retail counter has given me a good idea of the many questions addressed to the photographic dealer. These questions—"conundrums" the more frivolous and innocent of the youthful assistants called them at the place where I graduated in the trade—in spite of their apparent simplicity, proved often times extremely difficult to satisfactorily answer. This will not be so surprising to my readers when I mention that my principal regarded photography—although in reality an important section of his business—as a troublesome side-line, which, as it increased, became a source of greater worry. He was a dear old man, but somewhat shortsighted, and recoiled with horror at the suggestion that he should himself become practically acquainted with the art, nor could he be induced, at that time, to engage an assistant having sufficient practical knowledge to take charge of the department. Time, however, brought home the necessity of the latter course, and since then the old gentleman has looked with more kindness upon a flourishing photographic department, for he has found that the ability to at once cope with difficulties has removed them. It is not, however, every business which has a photographic section large enough to jusify a skilled assistant, and a later experience in the wholesale trade has convinced me that a considerable bulk of the trade is really done by dealers in this position. Such small dealers get along very well in vending the cheaper apparatus and in supplying films and papers—which they regard as mere packets of proprietary articles—but when an amateur somewhat advanced appeals to such a dealer for assistance, as he has a right to do, then often it is found

* The first of a series, reprinted from the *Photographic Dealer*, and intended to help the dealer answer questions put by buyers of photographic apparatus and material. So many professional photographers now sell supplies that we believe these papers will be useful to our readers.—Ed W. P. M.

that the amateur is capable of teaching our dealer many a lesson. Let it be understood that I do not suggest that dealers do not know their business, but I do say that those who have gravitated, so to speak, into the trade could have more knowledge of photographic matters than they sometimes have —to themselves it would be no disadvantage, to their receipts and customers it would be certainly beneficial. It was for this reason that I cheerfully complied with the editor's request to write a few notes upon points where knowledge is hazy. Some of my readers may be well acquainted with the matters with which I shall deal; so much the better, but I may say that no points will be treated upon that have not been a source of trouble to some dealer or customer at one time or another.

In my present article I intend to briefly deal with the rapidity of lenses, but before proceeding I must here acknowledge the obligation I am under to Dr. E. Holm, the author of *Das Objectiv im Dienste der Photographie*, and to his publisher, Mr. Gustav Schmidt, both of Berlin, for their kind permission to use information from the above book for the purposes of these notes.

A gentleman of my acquaintance, and now with one of the great lens manufacturers, has told me how upon the introduction of the first Zeiss lens he compared it with the lens of another well-known maker but of the older and then more general form of construction. The so-called test was partially made in fair weather, and the latter lens, which had a comparatively small aperture gave an excellent instantaneous picture. The verdict given was that the newer lens was quite unnecessary, as the older form was so "rapid" that it could be stopped down much further than the new, and yet be as rapid as the latter. I also well remember being shown a negative taken with a well-known anastigmat late in the twilight at *f*/8. Knowing the light and other circumstances, I was not a little astonished that so excellent a photograph was obtained, but it seemed my visitor had called to express his disappointment. He was not dissatisfied with the negative as one taken at *f*/8, but he certainly expected that the *f*/8. of the lens of the celebrated maker would be much faster than the *f*/8. of his nameless rectilinear. My friends, who have grown wiser since then, were, like many others, somewhat confused as to what really gives rapidity. It can be in general stated that rapidity is dependent only upon the aperture of the particular lens. The glass used in lenses of good makers may be considered as being of one standard degree of transparency; care is taken that glasses are selected which are not discolored and have no tendency to become so. If in an anxiety to claim every possible advantage for his lenses, a maker states that their rapidity is out of proportion to their aperture—well, let us be charitable, and put the statement down to the credit of the too pushing assistant! Negligence in the after care of the lens can however, gradually, but most effectually reduce the rapidity of the lens, although its actual aperture remains of course unaltered. It is evident that a film of dust or bluish fog, which will gather upon all lenses, must exercise a considerable light-stopping power. No careful person would allow his lenses to get in such a conditions, but would periodically clean them; it is only those behind the counter of a dealer, through whose hands a number of valuable lenses pass, who can realize how vast a number of photographs are taken with lenses consisting of glass and dirt—the latter being certainly the denser medium. In recommending cameras to customers a dealer, if he wishes to secure the after custom of his client, should be chary of those cameras, chiefly of the box type, with high-class lens, where the lens is fixed to the instrument in such a way that it is only with great difficulty that it can be removed. With the more recent forms of astigmats, which have an air space between the two components of each combination, the need for cleaning is very great. Extreme differences in temperature occasionally cause a thin film of moisture or mist to be deposited upon the inner surfaces of such lenses, and this should be removed. This need be but seldom, but such a film makes its presence known in an evident and unpleasant form. Not only is the lens slowed down, but it will be found that the brilliancy of the picture is reduced, and it is impossible, to obtain clear shadows.

Rapidity is reduced to an infinitesimal

extent by the small air bubbles which are to be met with in all lenses made from Jena glass. Since all such lenses have these bubbles, the reduction of rapidity is much the same with all, and it cannot be said that one anastigmat is faster than another from the fact that it is free from, or has less, bubbles than another. In any case the reduction of rapidity is more a matter of theory than any practical disadvantage. Glass which has a large quantity of these air bubbles is rejected—not so much because the glass itself is on this account worthless, but in deference to the appearance of the finished lens. Glass with the *largest* amount of bubbles which is passed by the examiner at a lens factory will only slow a lens down to the extent of about 1 per cent. In practice, such a diminution of rapidity is immaterial. The most careful of "serious" workers would not dream of correcting his exposures to allow for the presence of air bubbles. One per cent. means that an exposure of one-one hundredth of a second should be increased by an additional hundreth part of an exposure, or an exposure of one hundred seconds should be lengthened to one hundred and one seconds. We can therefore well leave such trivialities alone. Apart from this unnoticeable reduction of speed, air bubbles have no influence upon a lens whatever.

Lenses have, as is well-known, their aperture usually expressed as a fraction of their focal length. *f*/8, etc. There are other systems of markings adopted by some makers, but these are merely other ways of expressing the same thing. To revert to the former system, the focal length of the lens is divided by its aperture, and the quotient is the aperture of the lens, Thus an eight-inch lens working at *f*/8 has an aperture of one inch. This rule is only true to some extent, and people often examining an eight-inch lens, and finding that its aperture is not one inch but only seven-eighths, may be inclined to question the accuracy, and, perhaps the honesty of the lens maker, when he finds the aperture denoted as *f*/8.

The fewer combinations of which a lens is composed, the faster it is, theoretically. Whether this increase of rapidity is sufficient to show itself is more than doubtful. I once had a one-sided argument with a gentleman selling an apparatus fitted with a cheap single lens, working at about *f*/14. I had suggested fitting a well-known anastigmat to the camera, but was confronted by a number of objections. As they were amusing, I put on an innocent air and listened. By an inimitable and snowball like series of arguments he showed how the *f*/14 of his single lens was equal in rapidity to the *f*/6 of the anastigmat, and was equal in definition to the latter, owing to its being stopped down. His volubility was extreme, and might possibly have impressed me had I been as simple as he believed. For all practical purposes the rapidity of the lenses, whether single or double, may be considered alike at the same *f*. apertures.

There is another fallacy in connection with rapidity, which is a relic of the days before anastigmatic lenses were in vogue. Some photographic workers choose a lens of longer focus than is needed for the plate they are using, in the belief that greater rapidity is thereby obtained. Although this opinion may be a good one from the dealer's point of view, there is little in it from the workers. With rapid rectilinears having a round field, considerable stopping down was required to have an image fairly sharp from edge to edge when working with a lens of normal focus. As the centre portion of the plate was fairly defined at a large aperture, it followed that if a lens of sufficiently long focus was obtained, the particular plate being used with it might represent only the central portion of the covering power of the lens. This, had its disadvantage in loss of depth of focus, and subsequent difficulties in focusing, but although the actual rapidities of the lenses were the same, there was some advantage in working rapidity obtained, since the longer focus lens did not require stopping down, or at least not to the same extent as the other. With modern anastigmats, a lens of normal focus can be used without fear of falling off. Even with these lenses there is a gain of rapidity which is more theoretical than real, when longer focus lenses are used. Light decreases in proportion to the square of its distance, hence those rays falling upon the centre of the plate have greater intensity than those falling at

the edges of the plate. This however is not apparent, except in the case of wide-angle objectives, and the detail need not be considered when it is a question whether a 5, 6, 7, or 8 inch lens is to be used on a 4 x 5 plate.

PHOTOGRAPHY AS A DETECTIVE.

BY PAUL CLARE.

At the time these lines are being penned an interesting trial will be commenced in France—a trial for murder. The murderer was unknown to the police—they had arrested and released at least one innocent man—and they were without any tangible clue. The first hint of the murderer was obtained from a photograph of the scene of the crime, and the tracing of the criminal was done in the office of a man of science, aided by the camera.

Everyone has heard of the Bertillon system for the identification of criminals—it makes good "copy" for the Sunday newspapers. M. Bertillon was the man of science who tracked the murderer, and he did it by a side issue connected with his system—by the comparing of finger-prints.

A murder had been committed; the motive was robbery. Photography took a hand in the case when a photograph of the room in which the murder had been committed fell into the hands of M. Bertillon. In the room there was a coin-cabinet fitted with glass doors. One of these glass doors was broken, presumably when the coins were abstracted. On the broken edge of glass a few white spots were noticeable. M. Bertillon was just the man to immediately suppose that those spots were finger-prints. So it proved. Greasy finger-marks had made the frame slightly opaque in spots, and the spots caused them to photograph lighter than the surrounding glass. Fortunately, when the scientist reached the room he found the finger-marks still there. No one else had fingered or cleaned the broken edge of glass; and no one had noticed the marks—they were not so prominent as were their reproductions in the photograph. He carefully removed the broken glass, cut it into two pieces with some of the marks on each, and dispatched the pieces to his studio, each in charge of a policeman.

Probably at this stage of the work M. Bertillon himself did not attach much importance to his clue. The marks might have been made by any of the many policemen who had examined the room; they might have been made by the master of the man killed. Prints from the fingers of all these persons were obtained and compared with the photographic enlargements which had been made from the grease-marks on the glass. In no case was there a similarity.

No two people in the world have fingers in which the skin is ridged in exactly the same manner. The turns and twists, the circles and curves of the tiny corrugations on a finger seem to be entirely erratic and haphazard. One line suddenly dies out between two others, or it may fork into a double line. There may be dozens of breaks and peculiarities on a single finger-tip. Anyone interested in figures knows how incalculable is the number of possible combinations in chess; among the whorls and curves of the finger-balls the number is increased a thousandfold.

When it was found that no person having legitimate entrance to the room had made the prints, M. Bertillon had one hope of finding the man. If the man had ever been in the hands of the police an impression of his finger-tips was on file. M. Bertillon felt that he would very much like to find the man just to ask him how he came to be in the room at such an important time.

The Bertillon system of identification is a matter of measurement. The height, various directions of the head, the length of the foot, of the forearm, of the middle finger, of an ear—such are some of the measurements taken. No two men have been found who are exactly alike in every respect, even apart from finger-tips. But after a person has been recorded in every possible way, impressions of his finger-tips are also taken. M. Bertillon thinks he has

all the necessary data without them—still, there is no harm in having them on record.

It was this chance—of the man being on record in the "rogues' gallery"—that M. Bertillon turned to. At first sight, it would seem a hopeless task to run through scores or hundreds of thousands of cards to identify so delicate a matter as a finger-print. In reality, it is much simpler.

Finger prints are diviced into four main types, and each of these types into several sub-classes. Leaving the sub-classes out, such is the possibility of diverse arrangements of the four fingers into the four classes, that less than 1 per cent. of the cards will meet any required arrangement—that is, there are considerably over one hundred possible arrangements of the four main types. As all the cards are marked with their arrangement, the clerk who searches them can run over them very quickly. When he reaches one of the correct arrangements, his practised eye can often judge on it by some peculiarity of sub-type. Only those cards very close akin to the one in question need be critically examined, and by a mere glance through a glass a wrong one can be discarded. In the present case the likely cards were brought to M. Bertillon. The place was the office of the Anthropometric Service of the Paris Prefecture of Police, of which M. Bertillon is chief.

Several cards were brought to the chief and laid aside. Then one came which appeared promising. Detail after detail was compared and found identical. Enlargements from the record card were made, but these were in case a jury should ever sit on the case; for his own part he was convinced.

M. Bertillon went to the prefect of police. "Arrest a man named Scheffer." The prefect demurred. "If he is the wrong man I will reimburse him," said M. Bertillon. Scheffer had never been convicted of a crime, but once he was held on suspicion. It was then that the police registered his record.

Scheffer was arrested, and he confessed the crime. His trial will come on before these lines are printed. Before they are read he will probably have been sentenced.

THE LATEST IN OZOTYPE PRINTING.

THE simplicity and beauty of the ozotype process was demonstrated to a very large audience of the members of the Birmingham Photographic Society recently by Mr. Manly, the inventor of this facile method of pigment printing, and in opening his lecture he congratulated his hearers upon being the first to receive a demonstration upon the newest method of treatment, wherein the old hydroquinone action is entirely replaced by the use of ferrous sulphate in the superimposing or the pigment-plaster stage.

It was, of course, only natural that the lecturer claimed the premier place for his product among all other processes, whether of carbon or platinotype; over the former, as requiring no double transfer, or chance of spoiling by error in printing out the image; and over the latter, by allowing choice of color and greater latitude for choice of sentiment and individuality of aim. The actual manipulation, however, was identical with the treatment meted out to the carbon process minus the need for safe-edge during printing, actinometer, and the absence of reversal mentioned above, while blistering was unknown and undue immersion of sensitive fingers in the bichromate solution absolutely unnecessary.

The process lent itself admirably to the manifestation of the artistic sense, inasmuch as the quality of the finished picture depended only and entirely upon the paper selected, which Mr. Manly pointed out should be, by preference, of English make rather than of foreign 'facture, as all British papers were more carefully and more perfectly sized, although the German and French products could be improved by the addition of a little fish-glue to the sensitizing solution, the application of which latter he then proceeded to demonstrate. To coat a sheet 30 x 15 inches, he poured upon the centre of the paper about two drachms of the special sensitizing solu-

tion supplied the company.* This was quickly applied by rubbing—with a circular motion—by a pad of flannel in which was cotton wool, the rubber putting one in mind of the pads used by French polishers. The final surfacing was done with soft "butter muslin," and any marks on the surface occasionally found, could, he said, be destroyed by rubbing lightly across them. The paper could then be rapidly dried in the usual way—of course not in daylight—the process taking but a short time.

Mr. Manly here said that in selecting a type of negative one should remember that such a one which gave a good platinum print should also give a good (or better) ozotype picture.

When the paper has been exposed under the negative to a good (day) light for about three minutes it should be examined, and if the *half-tones* are seen the paper should be removed and washed. The lecturer here pointed *out* that light clouds would not be visible until future stages had been completed.

The print should now be washed well, and a *sine qua non* of success, and freshness of the paper was, that the margin should be perfectly white; if at all discolored, the addition of a few drops of a 10 per cent. solution of sulphuric acid to the washing water would improve matters.

The next stage dealt with the placing of the pigment upon this print-out image, and the following was the mode of procedure:

A bath made up according to the new formula was recommended, and consisted of:

1. Water	40 oz.
2. Sulphuric Acid (10 p. c. solution)	2 drachms.
3. Ferrous Sulphate (granulated)	60 to 80 gr.

Two dishes were used, one of which contained clean water and the other the above acid bath, kept at a temperature of 60° to 70° F.

Taking a well-printed picture, it was immersed in the clear water for about ten seconds, and the pigment plaster, procurable from the Ozotype Company, was simultaneously placed in the acid bath for a like period. When the print had had its ten seconds in water it was transferred to the acid, and placed in contact (under the liquid) with the pigmented plaster, the two being then withdrawn, lightly squeegeed, and placed between blotters to dry.

Pressure was to be avoided, except in the case of rough papers, when a gentle and momentary pinch under a press was advised, and the remaining contact to be spontaneous for about half an hour or so.

(The treatment of fainter prints to be as above, but allowing fifteen seconds immersion, while for very faint images twenty seconds was advised; but it should be noted that if heavy pigments, as *red*, be used, then less time should be allowed to the immersion stage of the acid bath.)

When sufficient time has been allowed the backing of the pigment plaster is removed by soaking in hot water, exactly as in the carbon process, except that the right time for stripping is adjudged by readiness to slip between the movement of the thumb and forefinger applied at one corner. When developed or "painted" to the desired point the picture is removed from the warm water bath (temperature of which has been maintained at the mean of 110° F.), and is cleared in the following solution for about five minutes:

1. Alum (powdered)	2 oz.
2. Water	40 oz.
3. Hydrochloric Acid	30 minims.

The print is then well rinsed in plain water, and, when dry, will be ready for mounting.

It was subsequently elicited that a modification of the ferrous sulphate bath gave a large control over the degree of printing, and also of varying the effect upon the varying qualities of surface printed on. Thus by *increasing* the ferrous sulphate a picture in lower relief of pigment was procured, and *vice versa*. An increase in the amount of the acid raised the relief, gave the appearance of deeper shadows, but with perfectly clear high lights, while if the ferrous sulphate be increased to 120 grains it lowered the relief, gave perfectly the faintest detail, but no heavy shadows. Thus if a negative be weak, a much smaller amount of the ferrous salt should be used. The ferrous sulphate bath for rough papers should be warmer than that used for smooth.

* Ozotype supplies can be obtained in America from Geo. Murphy, Inc., 57 East Ninth Street, New York.—ED. W. P. M.

COLOR PHOTOGRAPHY ON PAPER.

ANENT the Sanger-Shepherd process for producing photographs in color on paper, reported on page 42 of our January issue, the *British Journal of Photography* publishes the following summary of the method:

"*Color Photography on Paper* is the title of a booklet issued by Messrs. Sanger Shepherd & Co., 5, 6, and 7 Gray's Inn Passage, Red Lion street, Holborn, W. C. It describes in detail the process which Mr. Sanger Shepherd recently brought before the London Camera Club. The following extract conveys what is essentially claimed for the new departure:

"'The process is based upon the well-known fact that any color of the spectrum, and therefore any color found in nature, can be matched by mixtures of three colors of the spectrum itself—red, green, and blue. To utilize this fact in order to secure a photograph in natural colors, three negatives or color records of the object are taken through three color filters, which sort out the relative proportions of the three primary colors in the object photographed. From these three negatives, which are all taken on one brand of plate, prints are made on a flexible celluloid printing plate coated with a film of gelatine sensitized with a bichromate salt and developed in warm water, when all the gelatine unacted upon by light dissolves, leaving a low relief in clear gelatine upon the celluloid base. These prints are then stained up in color baths, the print from the red filter negative in greenish blue, the print from the green filter negative in pink, the print from the blue filter negative in yellow.'

"The new departure consists in dispensing with the celluloid film as a component part of the finished print. It was found by experiment that if a gelatine relief stained with a suitable dyestuff is laid in contact with a damp sheet of paper coated with a thin film of soft gelatine, *the whole of the coloring matter* will in a few minutes leave the hardened gelatine relief and be absorbed by the softer gelatine coating upon the paper.

"The important part of this discovery lies in the words printed in *italics*. Very many attempts have been made to use bichromated gelatine surfaces in order to secure color prints from negatives taken through three-colored light filters or screens, but all have failed in practice because of the difficulty of getting the printing surface to part with the correct amount of color required for each print; and the reason is obvious, for all these processes—collotype, hydrotype, heliotype, etc.—are based on the action of light producing a varying power of absorbing moisture in a gelatine film of even thickness, and therefore the prints vary enormously with changes in the humidity of the printing surface or atmosphere. In the new method, however, all the gelatine constituting the relief is insoluble, and each particle of gelatine takes up relatively the same amount of the coloring matter, the total amount taken up (the whole of which is subsequently transferred to the paper) depending entirely on the varying thickness of the relief, corresponding to the gradations of the negative from which it was printed."

In another part of the *Journal* Mr. Alfred Pumphrey writes to the editor as follows:

"I have been shown a sample of work done by Mr Sanger Shepherd, and have seen the detailed instructions for the things which he proposes to supply for the production of three-color paper work.

"Had Mr. Shepherd wanted a nominal fee for the use of what he intends to supply, I should have willingly have paid such, but I find he is not only offering at a somewhat high price things which are almost costless, but he adds conditions which are such that I for one should not care to accept, such as that the materials he sells shall only be used for printing from negatives made with his screens, which, if once accepted, would be a bond not easily broken.

"The outline of the process he describes consists of the simplest possible outfit: a gelatine film on paper (such as P. O. paper, bromide paper minus the silver salts, which, of course, can be discharged by

hypo, for trial); a carbon photograph, which is moistened with any desired color. The paper with gelatine surface is moistened, so that it swells to its fullest extent. The carbon picture charged with color is pressed into contact with the paper and left in contact for a time which will vary from a few minutes to half an hour or more, when the color from the carbon picture will be transferred to the paper. After one color is transferred it is followed by the next. Thus any photographer can prove for himself if what is offered is worth his attention.

"The next question is, Has the so-called new process been in work before? I think it has, possibly unknown to Mr. Shepherd, for the reproduction of writing a similar process is in constant work, but under slightly different conditions. Writing made with aniline inks of various colors is brought into contact with moist gelatine when the gelatine takes up the color from the paper. This is the identical process in principle introduced by Mr. Shepherd. Of course for reproduction of writing the impressed gelatine is only a means to an end—viz., the production of copies of the writing. The same may be done with the gelatine impressed with photograph. Several prints can be made from one gelatine if enough color is put on a suitable paper.

"It does not seem to me that the using of half a process already in use is an invention; it is only an application of methods in use. Further still, in your issue of the 16th your correspondent, Mr. Bennetto, of New Quay, informs us that so far back as 1893 he worked a plan of printing colors (or stains) from a carbon transparency on the moist gelatine, which is the gist of Mr. Shepherd's claim, I take. I hope I have said enough to make it evident how any one can work color prints. If not, I should be glad to give more details."

In the *Amateur Photographer* Mr. Thos. Bolas writes concerning the risk involved in accepting the license necessary to the working of the process. He says:

"Without knowing who are the patentees or the exact nature and wording of the patent claims, any discussion of the patent itself is at present quite out of the question; but the terms under which licenses are said to be granted are such as to suggest the need of a certain amount of thought and study as to the far-reaching nature of the special consideration to be given for the license in the present case. It is also desirable to say a few words as to the risk involved in accepting any license under a patent without competent professional advice and considering every disability such acceptance may entail.

"Many persons fail to realize that a licensee under a patent is, in law, estopped or barred from denying the validity of the patent; therefore he may become, in a sense, the slave of the patentee. This appears to be perfectly just, as it is, in effect, a modern version of the ancient doctrine that no one can claim protection under a law and at the same time impugn that law; moreover, it is an illustration of the constant need of the old caution, *caveat emptor*, which seems really to have a wider significance than that commonly attached to it, the word *emptor* being often used for negotiator or trader.

"The estopped position of the licensee in the above-mentioned respects is defined by many judgments, one of the clearest expositions being the following by Lord Blackburn in the case of Clarke *vs.* Aidie: 'If he has used that which is in the patent, and which his license authorizes him to use without the patentee being able to claim against him for infringement because the license would include it, then, like a tenant under a lease, he is estopped from denying the grantor's right and must pay royalty. Although a stranger might show that the patent was as bad as anyone could wish it to be, the licensee must not show that.'

"Now as to price. The obvious price of the color-print license to amateurs appears very low, as a license is to be given even with a 20 shillings set of materials. Still the real price, as disclosed by the conditions, may be high, as it may include or involve a considerable fettering of the amateur in his color work for nearly fourteen years. Any stipulation that negatives must be obtained by the use of the Sanger Shepherd filters may prove especially onerous, and, like the old stipulations as to the way of using the Welsbach mantles, may have in it the germ of many thousands of writs, injunctions, suits, and compromises.

"I am not suggesting that the process in

question, which, perhaps, for want of a better name I may at present call the Brewerton-Bartlett-Shepherd modification of hydrotype, is or is not worth a high price. All I urge is that the conditions of taking a license be fully considered before any binding and far-reaching bargain is concluded."

ILLEGAL USE OF PORTRAIT NEGATIVES.

FROM a decision recently given in the Third Civil Chamber, Paris, says the editor of the *British Journal of Photography*, it seems that the law is the same in France with regard to the photographer's right of ownership in the negative as it is in this country; also, that it is illegal for him to make use of it for any purpose of his own. The case was this: Some time ago a musical society there gave an entertainment, in which two little girls danced in costume. Their parents afterward took them to a photographer and had their portraits taken in their fancy dresses, and at the time requested that no copies were to be made except to their order. A little later on they were annoyed to find that the children's portraits were being used for picture post-cards, which were commanding a considerable sale. Thereupon the parents instituted legal proceedings against the photographer, and claimed damages. The Court decided that, although the negative, in accordance with the law on artistic copyright, was the property of the photographer, the model had the right to forbid its reproduction or exposure of prints made from it, and the defendant had to pay three hundred francs by way of damages. The reason why the Court gave so small a sum as damages was that as the children were so young their appearance would be considerably modified before they were adults. Therefore the Court considered that no great prejudice had been done them.

Now, this case seems to be precisely on "all fours" with that of Pollard *vs.* the Photographic Company, tried in our Court of Chancery in 1888—the first of its kind in England. In this case the portrait of a lady was used as a Christmas or New Year card. Here an injunction was granted with costs, and, if we remember rightly, damages were not asked for. Other cases have since been dealt with here, with similar results. Although no damages were claimed in the above cases, the costs that fell upon the photographers were by no means insignificant, as most would be aware who have had to do with Chancery suits. Some little while ago in one of the inferior courts of Scotland it was ruled that the photographer had the right of exhibiting portraits of his sitters as specimens; but this ruling was upset on appeal to a superior court, and an injunction, or "interdict," granted, and the photographer was condemned in the costs. It is satisfactory to learn that the law in France is that the photographer is the owner of the negatives of his sitters, but that he, like his *confrères* in this country, is prohibited from making use of them without their consent. The same thing, we believe, prevails in the United States.

Development with Chloride of Gold. A very interesting communication was made at a recent meeting of the Photographic Association of Vienna. Dr. B. Homolka reported that he had succeeded in developing the latent image on gelatino-bromide and gelatino-chloride of silver papers with a dilute solution of chloride of gold. He had, however, been particularly successful with print-out-papers, such as Solio. The strength of the solution was 1:1000. The process appears to be very slow, as it required fifteen hours to develop a gelatino-bromide plate. In order to retain the purity of the high lights in developing printing-out-papers, it is desirable to add phosphoric acid to the solution. With gelatino-chloride prints an exposure of fifteen to twenty seconds to daylight was sufficient. After washing the exposed paper is transferred to the bath of chloride of gold, acidified with phosphoric acid, and a print of very fine blue-violet color may be obtained in two or three hours. A specimen print was shown, and excited considerable interest.

ASSOCIATION NEWS.

ILLINOIS CONVENTION. OFFICIAL PRIZE LIST.

The fifth annual convention of the Illinois Association will be held at the Coliseum, Bloomington, Ill., May 5th to 7th, inclusive. The programme is not yet completed, but can be had by application to the Secretary, R. H. Mann, Virginia, Ill. The prize list follows:

Grand portrait class, open to the world: Six portraits, 8 x 10, or larger. Prize, bronze statuette.

Class A: Open to Illinois photographers only. Six portraits, 8 x 10, or larger. First award, bronze bust; second award, silver medal.

Class B: Open to Illinois cities of 15,000 or less. Twelve portraits, cabinet size or larger. First award, silver medal; second award, bronze medal.

Class C: Open to Illinois cities of 5000 or less. Twelve portraits, cabinet size or larger. First award, silver medal; second award, bronze medal.

Cabinet Class: Open to all Illinois photographers. Twelve cabinet size portraits. First award, gold medal; second award, silver medal.

Miniature Class: Open to Illinois photographers. Twelve portraits, prints to be not larger than 2½ x 3¾. Award, silver medal.

View Class: Open to Illinois photographers. Interior or exterior, any size. Award, bronze medal.

"Smith Trophy" Class: Open to Illinois photographers. Six portraits, to be not smaller than 9 inches one way; must be printed on American aristo platino paper. Award, silver cup.

Special Class: Open to Illinois photographers. Six cabinet prints of children only placed on one mount (or with matt openings); photographer to use his own idea as to the size of mounting. Award, one year's paid subscription to the St. Louis and Canadian *Photographer*, Mrs. Fitzgibbon Clark, publisher.

PENN.-MAR.-DEL.-VA. CONVENTION PRIZE LIST.

The second annual convention of the Photographers' Association of Pennsylvania, West Virginia, Maryland, and Delaware will be held at Armory Hall, Harrisburg, Pa., May 26th to 29th inclusive. An interesting programme has been prepared, and many attractive features are promised. The prize list is as follows:

Special Class: Open to professional photographers outside of the States included in this Association. One picture only. No restrictions to size. Must be a portrait. First prize, gold medal; second prize, silver medal; third prize, diploma. Rules of entry: A fee of two dollars shall accompany the entry.

Illustrative or Genre Class: One picture, no restriction to size; title to be appropriately inscribed on front of picture. Open to members only. Picture must have been made since July 1, 1902. First prize, bronze figure; second prize, silver medal; third, bronze medal.

Miniature Class: Six pictures not to exceed three inches and separately framed. First prize, silver medal; second prize, bronze medal.

Class A: Six portraits only; not less than twelve inches; must be framed. First prize, gold medal; second prize, silver medal.

Class B: Six portraits only. Not less than nine inches or more than twelve inches. First prize, silver medal; second prize, bronze medal.

Rating Competition Class: Six pictures, not to exceed seven inches nor less than four inches. Framed separately or all in one frame. First prize, gold medal; second prize, silver medal. All those receiving a marking of twenty-one points, a bronze medal.

Landscape Class: Open to professional photographers only. Three pictures; no restriction as to size. First prize, silver medal; second prize, bronze medal.

Salon: Any picture or pictures selected

for salon honors will be designated by a blue ribbon. Not more than one picture from any exhibit shall be so honored.

A silver trophy is also offered by W. F. Slater for the best six portraits printed on American aristo platino; and W. P. Buchanan, of Philadelphia, offers a prize of $25 in gold for the best picture made with Luxo.

The conditions of exhibition and all further information can be had on application to the Secretary, E. W. Brown, Beaver, Pa., or the President, T. B. Clark, Indiana, Pa.

BROMIDE ENLARGEMENTS.

BY C. WINTHROP SOMERVILLE.

THE economical and certain production of a bromide enlargement is not an easy attainment to those who have had but little experience in the work, so it is with the object of removing the thorns from the path to successful work that the following method is given:

Serious waste of paper and hopeless disappointments which invariably accompany first efforts have a tendency to discourage further work in this direction, and the abandonment of what is one of the most useful, beautiful, and often most necessary of photographic processes.

One of the drawbacks put forth by those who have been even fairly successful is the great difficulty in obtaining a desired tone in black and white, asserting that all depends upon the negative, which, if it be one of excessive contrast, technically known as "hard," then the bromide print will also be hard; should the negative, on the other hand, be "soft," "weak," or "thin," so will be the print. That this does not always necessarily follow, although true to a great extent, and the remedies for such difficulties I now hope to show.

EXPOSURE.

By some workers correct exposure is regarded as an absolutely essential factor for the perfect rendering of a bromide print. While not denying this as a general rule, I will say emphatically that it is not always the most certain means of obtaining the best results from a negative.

Varied tones and effects may be obtained by modifications of both exposure and development, and should always be made in conjunction with one another; their limits, however, will not be described here, as this article is written with the object of removing obstacles rather than involving complications.

Rodinal in the concentrated form as purchased is the developer I use both for this and all my other work, finding it constant and clean and quite free from stain; and being a single solution extremely simple for modification, requiring only the addition of water or bromide, as the case requires.

The following is a normal developer, that is to say, one that would completely develop a correctly exposed print in about two minutes, which is about the minimum time for rodinal. Therefore, if another form of developer is used, modifications must be made on the same scale.

NORMAL DEVELOPER.

Rodinal	25 minims.
Potassium Bromide, 10 per cent.	2 "
Water	3 ounces.

I, however, never use the normal strength in the first instance unless I have a large number of contact prints to develop, but always commence with what I call the "first-stage" developer, given below.

Prepare the following for a 15 x 12 print:

Rodinal	5 minims.
Potassium Bromide, 10 per cent.	1 drop.
Water (tap)	3 ounces.

This should be quite sufficient for the size of print, and to use a greater volume is not only unnecessary, but makes it difficult to pour back into the measure without spilling. Drain the water from print, and flood with developer; the image should appear in about two or three minutes very

weak and ghost-like, and as this is the all-important stage it should be carefully watched. This is the first stage of development, and should be continued until the details in the shadows are just visible, when the developer must be poured off, and the print flooded with water and left in it till the new developer is prepared. The appearance of a correctly exposed print at this stage is very similar to that of an overexposed platinotype before development.

Having arrived at the first stage, we now have the option of finishing the print in any tone desirable, ranging from the most delicate of dove-gray to the deepest of the much-coveted (why, I don't know) velvety blacks.

For a soft gray tone add to the developer:

Rodinal	5 minims.

Drain off the water from the print (which will have continued to develop slightly), and continue development until complete, which should be in about four or five minutes. If the image contain an excess of deep shadow, more rodinal may have to be added to completely reduce the silver; there is no fear of carrying development too far, as a correctly exposed print cannot be overdeveloped when using a weak or normal developer.

For a more vigorous tone add to the original developer:

Rodinal	30 minims.
Potassium Bromide, 10 per cent.	5 "

Development should be complete in two or three minutes, and here, again, if there be a large proportion of deep shadow, and the image show a tendency to hang fire, more rodinal must be added, and development continued till any muddiness of the shadows disappears, and they assume a clear depth of tone as the required vigor is obtained.

"Almost as good as a platinotype; could hardly tell the difference," is a criticism commonly expressed on a bromide print by those who know little or nothing about the process, and whose work would assuredly make the bromide process, were it human, hide its head in shame. It is absurd. When properly worked, with its power of range and variation, exquisite beauty, and delicacy of tone, bromide paper has no rival. Its manufacture is an art, which, by the way, is not possessed by all makers.

Errors in Exposure.

One of the most valuable attributes of bromide paper is the facility with which errors in exposure may be corrected, and, with careful manipulation to such an extent that incorrect exposure, 30 per cent. either way, may give no anxiety for the quality of the finished print.

If a print be under-exposed, the details at the first stage of development will be hardly visible, while the high lights and shadows will show greater contrast, there being little or no half-tones present at the weak stage of the image.

Prepare a fresh developer as follows:

Rodinal	5 minims.
Water	3 ounces.

Continue development as far as it is possible. Do not be afraid of staining the paper with prolonged development, as the developer is too weak to do any damage in that direction, especially if rodinal is used, which would not stain if the print were left in for hours. On the other hand, keep well away from the light, which, however safe, always has some effect on the emulsion; and if the time required be very long, say half-an-hour—I frequently take an hour or more over the first stage of development—it is advisable to cover the dish and give it an occasional rock.

If using rodinal never add bromide to this developer except in very warm weather, and then only a drop to prevent chemical fog; other developers, notably metol, may require it, but only sufficient to keep the whites pure.

When developed as far as it will go, add to the developer:

Rodinal	10 minims.
Potassium Bromide, 10 per cent.	1 drop.

This should be sufficient to give the required depth of tone in five to ten minutes; if, however, there be a tendency to hang fire, a fresh developer of the same composition should be applied.

The object aimed at is to secure all the

detail possible without producing the hard "chalk and soot" appearance characteristic of underexposure; the weakness of the developer and prolonged immersion has the tendency to bring up the detail and keep the image soft.

Overexposure may often be regarded more in the light of a friend than an enemy; but in this article I shall treat it as a foe to be overcome by dexterous manipulation.

When known to be excessive, the developer for the first stage should be modified thus:

Rodinal	5 minims.
Potassium Bromide . . .	5 "
Water	3 ounces.

(With slight overexposure, reduce the potassium bromide by half.) This will take some considerable time to reach the first stage, but patience must be exercised if success be desired; if, however, it takes longer than five minutes, add another five minims of rodinal.

The first-stage image will differ from the correctly exposed print in that probably all the details of the shadows will be visible, while there will be little or no contrast; the whole presenting a very flat appearance.

Add to the developer:

Rodinal	40 to 50 minims.
Potassium Bromide, 10 per cent.	10 "

Watch the image under the action of this developer very carefully, as I have sometimes found it act in a very peculiar manner, the cause of which I have as yet been quite unable to discover, often finding that a second print, under precisely the same conditions, will not work in a similar way. Upon applying the developer I have had the print rush off into an overdeveloped state without the slightest chance of saving it. For the beginner, it were better to use a developer slightly weaker, say:

Rodinal	30 minims.
Potassium Bromide . . .	10 "
Water	3 ounces.

This will have a tendency to make the finished print rather flatter, but it can be remedied by intensification, the formula for which I will give later. Whichever modification is used, continue development carefully without getting too near overdevelopment, which is very difficult to remedy successfully.

If there is any tendency to "hang fire," add a little more rodinal till the necessary depth and vigor are obtained.—*News Year Book.*

THE STRENUOUS LIFE.

It saddens and maddens the earnest and thoughtful man to see the maudlin, dwadling way in which the vast majority of those around him pass their lives. Yes, it saddens one, because the saddest thoughts are concerning "what might have been," and it maddens one to think how the efforts of a strenuous life are retarded, obstructed, and often nullified by the idiotic ineptitude, the utter incompetency, the mental unfitness, the physical impoverishness, the languid dilatoriness, the apathetic indifference, and the unambitious appreciation of life shown by the great mass of the rank and file of the employed classes. Where will it end, and what will be the future of English commerce and industry if the rising generation is made of such stuff as we see around us? If it needs the most strenuous efforts of the few sincere, earnest, and thoughtful men whom we find all too sparingly scattered like good wheat among the chaff to keep this rabble in order and guide them into the proper path, what would be the consequence if such help and guidance were removed? How many big businesses there are which would tumble down like a house of cards if the energy and earnestness of perhaps one or two men in them were withdrawn?

It is all very well to shut one's mind to such reflections as these, and persuade oneself, as some are optimistically inclined to do, that, "things are not quite so bad as all that; men are only human; they must make mistakes; you cannot expect hired labor to hurry or to think as one

would do himself." This sort of philosophy is very soothing, but it is not satisfying, nor calculated to be an incentive to a better state of things. It is the easy-going employer who is sentimentally disinclined to be too hard on a man who is most often found in the neighborhood of the bankruptcy court, if indeed he has not been right through it.

It is no doubt a harsh, cruel thing to say, as is often done by men who are kind, conscientious, and considerate to a degree in most things, that there is no room for sentiment in business. Sentiment has no face value, it will buy no goods, nor pay any wages, nor be accepted as security at the bank; it will not restore the equilibrium of a lop-sided balance sheet. It may soothe the mind, but it does not clothe or feed the body; why then advance sentiment as an excuse for inaction or blundering? A lie is a lie however it may be whitewashed or to whatever purpose it is applied, and a wrong is a wrong however varnished or gilded. If there were not so much of this grandmotherly sentiment about the world we would probably have smarter and more intelligent men to deal with.

Our American friends tell us the British workman is too well taken care of to be ever worth much. There would appear to be too much cheap benevolence lying around to be taken for the asking, and the philosophy of the British workman has resolved itself into "wot's the good o' hurryin', wot's the good o' worryin', wot's the good o' wurkin', wot's the good o' anything." He knows he will be taken care of whether he works or not. He will be given food, clothing, shelter, education, and recreation if he likes to ask for it, if he should fall ill he will be assured of medicine and nursing; and, if the worst comes, a decent burial at the expense of the community.

It may be thought that we take an extreme and cynical view, but if we leave out the "submerged tenth" of the population what shall we say of the other large fraction who are leading dull and useless lives, preying on their friends, or tolerated through a sentimental disinclination to interfere? Beyond this class there is another still larger of the indifferents, who are in employment but doing little or no good to their employers or themselves. Again consider another strata who are just middling, and another who are fairly good. So we go on through the grades of good, very good, excellent, exceptional, until we get down to the gold-bearing reef where we find the gifted, talented, earnest and resolute lives which are the leaven of the nation. Ah, how deep down we have to dig to find them, what dross we have to turn over and throw aside before we reach the shining metal. What trials and disappointments have to be undergone before true worth is found.

It is not hard to tell the diamond or the pure gold, nor is it difficult to know the men who are leading strenuous lives. As a rule the world delights to honor and reward them, though they are often found in humble circumstances unencouraged and unappreciated, because the strenuousness falls on barren ground, and noble-hearted men tug their hearts out against a combination of adverse circumstances.

So rare is the virtue of the strenuous life that we ought to encourage and help it forward wherever we find it, if it is in our power. Ruthlessly weed out any obstructions in its path, make the way smooth, and broad, and level, and it is a life that will accomplish much.—Penrose's *Process Work*.

Die Dreifarbendruck. By Arthur von Hübl. Published by Wilhelm Knapp, Halle a/S, Germany. This is the second edition of von Hübl's useful book, and has been brought up to date and thoroughly revised. The first section of the work deals with the theory of color and color mixtures; the second section with the theory and practice of three-color printing by half-tone blocks and superimposed stained film process. Each branch is dealt with exhaustively, especially the sensitizing of the plates, the preparation of the color, filters, and the choice of inks. Numerous diagrams are included, and colored test charts are given at the end of the book with which the filters can be tested. Half-tone reproductions of the results to be sought render these particularly valuable to the practical worker.

OXALIC ACID AS A PRESERVATIVE OF STOCK DEVELOPER SOLUTIONS.

BY "CHEMIKER."

OVER two years ago, or, to be exact, on November 16, 1900, the writer, in order to test the value of oxalic acid as a preservative for some of the newer organic developers, prepared solutions of a number of the latter, added the acid, bottled, corked, and placed them in the dark-room. Through ignorance on the part of a frequenter of the dark-room some of the solutions were consigned to the sink, leaving but three solutions intact, as follows:

No. 1.

Imogen	1 drachm.
Oxalic-acid solution	1 drachm.
Water	8 ounces.

No. 2.

Eikonogen	1 drachm.
Oxalic solution	1 drachm.
Water	8 ounces.

No. 3.

Pyrocatechin	1 drachm.
Oxalic solution	1 drachm.
Water	4 ounces.

The oxalic-acid solution referred to was made by dissolving twenty grains of oxalic acid in one ounce of water. Of these three solutions the pyrocatechin is still clear and bright, while the imogen and eikonogen are black, in bulk, seemingly totally oxidized. If my memory does not fail me the last time I saw the destroyed solutions they were all bad, especially the hydroquinone, a fact which surprised me, as this chemical as now prepared does not deteriorate as easily as some of the later introductions.

NEWS AND NOTES.

Amido-acetate of soda, mentioned in our last issue (page 9), as a substitute for ammonia or other alkalies in the "pyro" developer has been introduced commercially in a 20 per cent. solution under the name of "Pinakol Salt N," and is now recommended also as a substitute for hyposulphite of soda in compounding the well-known Farmer reduc-r. It should be used for this purpose in the proportion of 3¼ ounces of Pinakol salt to 78 grains of ferricyanide of potassium. This constitutes a stock solution which should be diluted for use with 5 to 10 times its bulk of water. The advantage of using Pinakol salt lies in the stability of the bath, which keeps well and may be used repeatedly until its strength it exhausted. The process of reduction proceeds rapidly, and is best judged by transmitted light. As soon as the correct density has been reached the negative should be raised and placed in an acid-fixing bath, which clears it and gives a deep brownish black tone to the image. If necessary, the negative may be reintensified with bichloride of mercury, but instead of ammonia, or sulphite of soda, the stock solution of Pinakol salt diluted with five times the quantity of water may be used to blacken the image after the negative is taken from the bichloride solution.

An imitation of celluloid has been made by dissolving in 16 parts (by weight) of glacial acetic acid and 1.8 part of nitrocellulose, and adding 5 parts of gelatine. Gentle heating and stirring are necessary. After the mass has swollen, it is mixed with 7.5 parts of alcohol, and stirring is continued. The resulting product is poured into moulds, or, after further dilution, may be spread in thin layers on glass. Consul-General Hughes, of Coburg, is of opinion that, "as an underlay for sensitive photographic films the material has important advantages, not the least being that it remains flat in developing."

EDITOR'S TABLE.

ROSS LENSES IN THE UNITED STATES.—Messrs. ROSS, Ltd., London, write:

"We will be greatly obliged if you will kindly intimate in an early issue of your journal that the well-known ROCHESTER OPTICAL & CAMERA CO., of Rochester, N. Y., have been appointed sole import agents for our photographic lenses in the United States, including the Ross-Zeiss and Ross-Goerz Anastigmat Lenses manufactured by us under license.

"The ROCHESTER OPTICAL & CAMERA CO. will hold a large stock of our lenses, and will be in a position to supply dealers promptly, and thus do away with the inconvenience and expense arising from the importation of a few lenses at a time."

FROM A "CONSTANT READER."—Mr. CHARLES STAFFORD, a Chicago professional, well known for his high-class work, writes:

"Enclosed find order for $3 for renewal in the year 1903. I have been a reader of your invaluable MAGAZINE since its inception, and for most of the time a subscriber. We—that is, my son and myself—never intend our subscription to lapse, as we consider it an absolute necessity to every professional. It is the only photographic magazine in English that is adapted to the needs of the working photographer. It is a constant incentive and spur to higher achievements. Wishing you a happy New Year, and trusting your subscription list may be greatly increased, I remain yours fraternally,

"CHARLES STAFFORD."

THE G. CRAMER DRY PLATE CO.—Referring to the proposed reorganization of this well-known firm, we are asked to state that the rumor that this company has been sold to a syndicate is untrue. All that has been done is this: At the request of a committee of representative photographers an option was given them for the purchase of 4500 shares in the new company, to be reorganized at a capitalization of $1,000,000.

A portion of these shares is now offered for sale to photographers of this country. The option is granted for a short time only, and if shares are not subscribed for speedily by photographers, on the terms named, then the option will be withdrawn and the G. CRAMER DRY PLATE CO. will continue as heretofore.

Of the $1,000,000 capital of the company the present stockholders retain $550,000. Subscriptions by individual photographers already made reduce the amount of shares now offered for sale to a little over $300,000. The capital of the proposed new company will be divided into shares of $100 each. These shares when issued will be full paid and non-assessable. There will be no preferred stock; hence, all shareholders will share alike in the profits of the new company in proportion to the amount of their stock.

The G. CRAMER DRY PLATE CO. has been, is now, and will continue to be an independent corporation. This new plan would make it, through co-operation, a business enterprise of photographers, by photographers for photographers, and should appeal to every camera worker.

A circular giving information in detail can be had from the office of the G. CRAMER DRY PLATE CO., St. Louis.

P. A. OF A. CONVENTION.—The Secretary of the National Association asks us to notify our readers that Wednesday, August 5th, has been set apart as the dealers' and manufacturers' day at the Indianapolis Convention next summer. This note was inadvertently omitted from the report of the Executive meeting published on another page in this issue.

THE *Developer Pamphlets* of the well-known Actien Gesellschaft für Anilin-Fabrikation, Berlin, Germany, having met with great sympathy in all photographic circles in the United States (where these booklets had a circulation of 100,000 copies some time ago), a new edition has been issued, of which we have a copy in hand. The tastefully bound booklet bears the title "Agfa-Handbook of the Agfa-Developers and Specialties of the Actien Gesellschaft für Anilin-Fabrikation," and contains in 48 pages very instructive communications on the excellent Agfa-developers: Rodinal, Eikonogen, Amidol, Imogen, as well as on Agfa-intensifier and Agfa-reducer. An abundance of well-proven formulæ and hints in connection with opinions of prominent photographers, etc., make this handbook very valuable for consumers of Agfa manufactures and for those who intend to become such. All interested should procure a copy of the handbook for ready reference.

AMONG English photographers the convenient little "Photogram Cards" are well known and widely appreciated. These cards, sent free on receipt of a two-cent stamp, by the PHOTOGRAM, Ltd., 1 Arundel St., London, W. C., comprise a series of thin cards, pocket size, as follows:

Guide to correct exposures in outdoor work and copying.

Table of enlargements and reduction, telephoto rules.

Directions and chart for fixing the time of best lighting of any view.

Thermometer scale and photographic temperatures.

Weights and measures—British and metric.

How to see stereoscopic slides without a microscope.

The set under notice is made up with new tables, and includes much new information. Doubtless many of our readers will be glad to avail themselves of these little helps, hence they are mentioned here.

PORTRAIT
By C. Durand Chapman
Newark, N. J.

WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XL. MARCH, 1903. No. 555.

THE IMPORTANCE OF A POLICY.

BY W. I. SCANDLIN.

THE word "policy" is defined by the *Standard Dictionary* as "prudence or sagacity in the conduct of affairs; wisdom or shrewdness in management; as, a merchant's policy." If policy has any place in the management of a business enterprise its importance and necessity should be recognized and appreciated in the conduct of a photographic business. The varying conditions under which a photographic studio must flourish or decay, the widely differing demands of different communities and the tremendous detail incident to the carrying on of a successful photographic enterprise render system and policy particularly important in this field of affairs.

The photographer about to open a new studio should, and must, formulate a definite plan of action before he can successfully begin his work. He must decide whether his scheme shall be worked out upon the lines of large output and low prices or upon smaller production and proportionate increase in value. Until this has been done he cannot even lay out his dark-room, printing-room, or appointments. Once the policy is adopted it should be worked out to completion without any considerable change in the plan of operations until it has had a chance to demonstrate its merit or demerit.

The man who goes into photography with a wavering purpose, waiting for events to direct him, is likely to continue in a state of uncertainty indefinitely. Concentration of thought and energy can only be effective when the business is built upon a well-defined plan. The so-called art tendency in photography should be carefully considered. The photographer should firmly settle in his own mind at the outset what his own attitude is to be toward this ever-present question.

Is he to follow the dictates of the new school and endeavor to educate his patrons to a higher understanding and appreciation of art, or is he to cater to the present demands of his community, striving to produce work that is honest and of good value, with the idea of constantly improving it both technically and artistically? In doing this he may gradually build among his patrons a finer taste and a demand for better work in a quiet and natural manner.

The statement cannot, I think, be controverted that the desire of the ordinary person who goes to the photographic studio for a photograph is, first of all, to obtain a likeness. This likeness, particularly in the smaller communities throughout the country, can hardly be considered, even under the best treatment, a work of art.

Let the principles of art be applied to each and every pose so far as possible. The average photographer, however, cannot afford to forget that he is in the business for profit. He must give his customer that which the customer requires if he will succeed. In catering to the popular taste the photographer may, while apparently following the demands of his patrons, lead them step by step into an appreciation of more artistic work which, in its turn, will bring him better prices. This result may

more easily be obtained by apparently following rather than ostentatiously leading his public.

To successfully work out a policy of this kind the photographer must keep himself constantly in touch with all that goes on in the photographic world, thus improving the quality of his output, keep posted upon the novelties as they appear in the market, and be ever ready to arrive at a quick and accurate estimate of the commercial value of this or that new thing among his own patrons. Once it is determined that a novelty is fitted to the demands of his own trade, he should not hesitate to adopt it. He should make it known at once in no uncertain tone throughout the entire section to which he caters. There is little or no profit to be obtained by the introduction of a new method or printing medium if it is known only to a small circle of people. If such a novelty is worth being introduced, it should be widely and strongly advertised. An innovation quickly loses its novelty. Its best results are always to be reaped while it is still new.

The progressive photographer, who is known and recognized as such, soon finds himself surrounded by a circle of patrons, larger or smaller as the case may be, whose support can be made very valuable if catered to on the right lines. Many of these people like to be considered connoisseurs. They feel complimented by being asked for an expression of opinion. The photographer with a policy takes advantage of all such means as this to extend his prestige.

If the policy of a photographic studio is to meet and satisfy the demands of its patrons those demands must first be clearly understood before they can be catered to successfully. Meantime, there will be found ample opportunity for the development of any special line of more artistic work.

The settled policy, once adopted, should be made the central point around which every business transaction groups. If the policy is built upon the lines laid down in its definition, the wisdom, prudence and shrewdness of its framer must become apparent in its results when put into operation.

PICTORIAL PHOTOGRAPHY.

The Kind that Brings Success.

BY CHARLES P. MARSHALL.

"It is never too late to mend!" Discouragement and despair creep into the hearts of hundreds to-day, the same as yesterday, and so they will to morrow and the next day and the days that follow. For

> Into all lives rain must fall;
> Unto all lands storms must beat;
> But after the rain and storm have passed
> The coming sunshine is twice as sweet.

Experience teaches that tears and toil are sometimes necessary to unfold the best side of our nature and ability. But to sit in the corner in lamentation weakens courage, strength, and ambition—the three graces of success. "It is never too late to mend" must be our watchword.

True, we cannot always behold our weak points. If, however, it is our good fortune to have kind friends reveal them, it is our duty to immediately mend our methods.

Now, encouragement and despair need not be guests in any studio that has the courage to cut loose from hackneyed ideas of "lighting and posing," commercial-sized cards, so-and-so's plates and backgrounds, and walks willingly along the path of art.

We are living in a great age—the age of art. It is the duty of every photographer to breathe in the wholesome pictorial atmosphere. Photographic malaria (indifference to art principles) is pulling down scores of men. A decided stand must be taken against its paralytic effects. It leads to all sorts of photographic diseases, such as "inflammation of lighting," where the style of lighting has, from stereotyped practice, become warped and wedged into ultra brilliant, ultra theatrical, and bizarre effects. People of taste and refinement do not admire or patronize pictures with start-

ling effects in light. "It is never too late to mend!"

Chronic Posing. Where the operator, from the lack of art and knowledge, has drifted into set attitudes that reveal the "pose" as the most prominent feature. Chronic posing limits variety and shows at a glance the copied-some-one-else's ideas. Such pictures are conspicuous by an utter lack of repose. "It is never too late to mend!"

Acute Focus. A deeply seated disease requiring vigorous treatment. In brief, it is a mania for sharp lenses and a passion for "stopping down" to secure clean-cut effects. Good judges and connoisseurs neither admire, advise, nor patronize "clean-cut" effects. There is a happy medium between sharp and fuzzy that appeals to all. It is apparent in pictorial photography. "It is never too late to mend!"

Tonal Fever. Intense admiration for pretty half-tones, irrespective of masses of light and shade, which are usually scattered and spotty. "It is never too late to mend!"

Vertigo of Background. Dizzy bursts of light and shade in background and an uncontrollable appetite for contrasting the light side of the face against the dark side of the background, and *vice versa.* "It is never too late to mend!"

Negative Rheumatism. Timing and developing for contrasty negatives that give "snappy" prints. It takes more than lithia water to cure this kind of rheumatism—it needs pictorial treatment. "It is never too late to mend!"

Gouty Retouching. Lead, lead, lead, spread on the face like leprosy, to give that patent-leather—wax-work—"swell" finish so fashionable in most studios, but not fashionable or tolerated among people of taste and refinement, who believe in, admire, and pay big prices for wholesome, natural flesh textures, refined by intelligent pictorial retouching.

With fingers weary and worn,
And eyelids heavy and red,
A retoucher sits in a sort of a trance
Piling on the lead.

Stroke—stroke—stroke—
In twenty minutes' time
A human face has lost all trace
Of the beautiful look divine.

Forehead, cheek, and chin
In texture look like one,
While furrows and lines of graceful trend
Into ugly ruts have run.

Stroke—stroke—stroke—
In his lathe of relentless lead
He turns a lovely likeness
Into a billiard-ball instead.

Palpitation of Printing. An insatiable desire to try every paper on the market from Sapolio to Hobo—ever looking for "cheapest and best" instead of using standard brands, and by thorough mastery learning their economy and excellence. "It is never too late to mend!"

Consumption of Commercial Cards. This form of tuberculosis can be easily cured if the patient is willing to take the medicine. Symptoms are: Copious orders of all the latest styles of pretty pasteboards. On the upper shelves in many a studio are quantities of last year's styles waiting their turn to be burned some dull day when the fit of cleaning-up is on. The wise use of plain-tinted cards cut to suit the prints will carry a picture farther toward exclusive style, Salon acceptance, high prices, and reputation than the unwise use of set sizes which, like ready-made clothing, have that "trim" and "neat" look, but fail to elicit praise beyond the commonest "How pretty." "It is never too late to mend!"

Absorption of Prices. "Thirteen for a dozen." "Twelve cabinets and one 8 x 10 for $3.50." "Panels that brought $6 last year reduced to $4 to popularize." "Four to five positions finished with each order." All these concessions just because opposition in the next street cut his prices. Back and forth they slash till the name of photography in that town is dragged below all respect. "It is never too late to mend!"

Dissolution of Credit. A miserable malady to contend with. Prominent symptoms are: Orders cut down by stock-house, time limit reduced, sight draft, mortgage. "It is never too late to mend" if the right medicine is administered.

Photographic Death. Last act. Scene at the desk. Accessories, a rusty pen, 5-cent pad, and a famished ink-bottle. Under the guidance of a despairing hand the following appears:

———, 1902.

Messrs. ———,

Stock Dealers.

GENTLEMEN: Please find enclosed $1.90 for the following articles: 6 doz. cab. paper, seconds; 50 oval cab. mts., No. 1222; 3 lbs hypo; 1 bot. chlor. gold.

Showcases, specimens, furniture, and all second the motion. Next week the shades are down, and on the front door is tacked a sermon by the sheriff.

"It is never too late to mend" seems a travesty on the truth in this instance. Nevertheless, rescue is possible if heroic treatment is taken in time—if business methods and art principles are injected into its fluttering veins.

Thousands of instances prove the truth of this homely proverb. I present these, familiar to all. When Early's raiders ransacked the Shenandoah despair settled like a pall over the Potomac camp. Then it suddenly lifted, and the sunshine of success shone bright when Sheridan wheeled the flying forces into line and planted the victorious Stars and Stripes square in the wake of a vanquished enemy.

There was a colored boy kicked and cuffed about his community. Between the dark clouds he caught a glimpse of the star of ambition. At an age when most boys are well along in ordinary studies he discovered his ignorance. By close application he acquired an education. It wasn't too late for him to mend, and now his eloquence and equity are world famed. His success is of the highest order; he is an educator, and is doing much good for his people. If it is ever your good fortune to hear him speak you will agree with thousands that "lips never let fall more graceful and polished language than that of Booker T. Washington."

It was only a few years ago in an Ohio town that a photographer plodded along the beaten track, turning out common photographs. Not satisfied with his progress, and realizing his need to know more about art, he took time to study—took time to examine, pore over, and delve into the mysteries of painting, engraving, etching, studying faces and forms outside of his studio, unlocking the secrets of light, line, and shade. His photographs became pictures. Life looked rosier. It was not too late for him to mend. In fact, he mended so well he packed up and went to New York city, and to-day he is one of the busiest artists in Fifth Avenue. He is particularly successful with men's portraits. Puts individuality into his portraits—draws personality out of his subjects, receiving generous orders and envious prices. It is needless to add that his portraits have *pictorial qualities*. You all know him; his name is synonymous with portrait excellence.

Thus from a common photographer to a good photographer, to an artist photographer, is possible. Pictorial leads; it is the key that unlocks the door to success. To the thousands who stand outside and who are willing to study, "It is never too late to mend!"

THE PROGRESSIVE EDUCATIONAL CONVENTION.

A Letter from the Secretary of the P. A. of A.

THE convention of the Photographers' Association of America will meet at Indianapolis in Das Deutsche Haus (German House), August 4, 5, 6, and 7 next. The German House offers every convenience for convention purposes.

This is a progressive age. All progressive photographers are united in an effort to improve themselves as photographers and as business men. There is no better way of doing this than to associate yourself with fellow craftsmen animated with the same desire.

Then, again, you can learn many things worth the knowing by exhibiting your best work at the convention and comparing it with what others are doing. We want you to send your best work only. If you desire it there will be someone there who will give you a competent criticism upon its good and bad points.

There will be no prizes. We have

learned that prize-giving is not the best stimulus. The craft has wisely concluded that it is better to abandon prize-winning and exhibit work for the work's sake, for friendly comparison and competent criticism. Where are the prize-winners of past conventions?

The convention will be one from which you cannot afford to stay away. Your Executive Board is busy arranging educational and social features which will make the Indianapolis convention memorable for its practical helpfulness and pleasures. Lectures, demonstrations, and pictorial exhibits will all be of the very best. The talks on business and art lectures will be special features and worth coming to hear and see.

The growth of the younger men in photography is the result of our conventions. Almost all the leaders of to-day are enthusiastic upholders of the convention as a practical and invaluable help in their advancement. We want you to share in all the good things provided for you.

The entertainment committee has a generous programme in preparation. Bring your wives and sweethearts. They will be well taken care of. Special arrangements regarding hotels and railroads will be announced in due time.

Make up your minds now to come to the convention, and prepare your exhibit in good time. Start to-day, but first of all write the Secretary and tell him that you are coming to Indianapolis.

Fraternally yours,

GEO. G. HOLLOWAY,
Secretary P. A. of A.

TERRE HAUTE, IND.

"ACETONE-SULPHITE."

BY CHAPMAN JONES, IN "THE PHOTOGRAM."

IF "acetone-sulphite" really has all the advantages that it is claimed to possess, or if it has the most of those advantages, it must not only prove very useful to photographers, but must be classed as one of the most important reagents with which we have to deal. Obviously, it is a two-sided substance, and may be regarded (1) as a substitute for acetone, and (2) as a substitute for sulphites, and it is claimed to effectively take the part of both these classes of substances.

Acetone has recently been introduced for use in developers containing sodium sulphite instead of the usual alkali. Acetone, as is well known, will combine with an acid sulphite or bisulphite. If, therefore, a normal sulphite is taken, and the acetone compound with the bisulphite is by any means formed, the alkali replaced by the acetone becomes available as alkali for purposes of development. Those whose knowledge of chemistry is but slight will understand that the ordinary sodium sulphite may be regarded as, and is actually producible from, one molecule of sulphur dioxide with two molecules of caustic soda, forming the neutral salt. Similarly the acetone-bisulphite, now called "acetone-sulphite," may be regarded as one molecule of sulphur dioxide combined with one molecule of caustic soda and one molecule of acetone. If, therefore, acetone forms this compound by being placed in contact with the ordinary sodium sulphite, half the soda of the sulphite is set free.

It appears that Messrs. Lumière and Seyewetz, when introducing acetone as a photographic reagent, considered or suggested that although acetone alone will not thus liberate caustic soda from the sulphite, that in the presence of a developing agent such as hydroquinone with which the caustic soda might combine, the soda would be turned out by the acetone. In other words, that the acetone might cause the soda to move from one compound to another, though it could not turn it out if there was nothing else for it to combine with, the evidence being that development would take place when acetone was added, much as if an alkali had been added. Now I venture to say that if this really described the change, no one would have used acetone twice, and few people at all, because if it is of use only as an indirect means of getting an alkali; it is hardly worth a second thought. To my mind it

would be absurd to suggest the use of a very volatile and readily inflammable liquid instead of so stable, harmless, and easily manipulated a substance as sodium carbonate. And if an aqueous solution of acetone is to be used it would prove uncertain because of the ready volatility of the acetone. But it was suggested, I believe, that the advantage lay in the fact that there could be no alkali obtained from the sulphite in excess of what the hydroquinone (or its equivalent) could combine with. This certainty might be an advantage to careless workers, but quite easily obtainable without the introduction of acetone by simply adding the alkali in proper moderation. It might be claimed, too, that one would get with acetone the effect of caustic alkali without the use of a solution of a caustic alkali; but for the matter of safety and convenience, I expect most photographers would rather deal with a solution of caustic soda in their dark-room than acetone or a solution of it; and I think, too, that sodium carbonate is generally found so efficient that no one would desire caustic alkali, however easily manipulated, because of any supposed superiority.

Dr. Eichengrün has shown that, as was to be expected, when acetone is added to a solution containing hydroquinone and sodium sulphite, the change just mentioned does not take place. Hydroquinone-soda and acetone-bisulphite are not produced, for by shaking up the solution with ether the hydroquinone and the acetone were removed unchanged. He then suggests that the source of the alkali, or the effect produced (that is, the development), as if alkali were actually present, must be sought for in the acetone itself, though he admits that it is surprising to find acetone acting like an alkali. According to my notion, Dr. Eichengrün is even further from the truth than Messrs. Lumière and Seyewetz. There does not seem to be any need to ascribe any more basic functions to acetone than those shown in its combining with an acid sulphite, nor to attempt to defend the actions suggested by Messrs. Lumière and Seyewetz.

The action of acetone presents itself to me in a way which may, in a sense, be regarded as a modification of the view of Messrs. Lumière and Seyewetz, though it is really fundamentally distinct. Imagine an exposed plate covered with a solution containing hydroquinone (or any similar developing agent) and sodium sulphite. It only needs the addition of alkali to cause development. If the exposure has been considerably prolonged and one has patience, development will take place slowly even in a slightly acid solution, as I showed many years ago, and has been abundantly confirmed. Therefore, we have unstable (that is, exposed) silver bromide, the developing agent, and the sulphite, on the very verge of reaction, together with the production of metallic silver, sodium bromide, oxidized developing agent, and bisulphite of sodium. Thus:

Silver Bromide.	Sodium Sulphite.	Water.
AgBr	$NaSO_3Na$	H
AgBr	$NaSO_3Na$	H
	O developing agent	

becoming

Silver.	Sodium Bromide.	Sodium Bisulphite.
Ag	BrNa	SO_3NaH
Ag	BrNa	SO_3NaH
	O + developing agent.	

This change, I say, is on the verge of taking place; a little more exposure of the silver bromide will suffice to start it; a little alkali to neutralize the sodium bisulphite will start it without the extra exposure. It is the acid character of the bisulphite that prevents the change, and anything that will get this compound out of the way will suffice to enable the change to go on. Acetone, although not an alkaline substance, will combine with the bisulphite and so determine the change. I venture to think that this explanation represents the facts of the case, and is entitled to be called something more than a theory.

We are told that "acetone-sulphite" will serve instead of acetone in development. It seems to me that one might as well say that sodium bromide will take the place of caustic soda or sodium carbonate. The acetone in acetone sulphite is already combined with the very substance that it is wanted to combine with in the developer. Of what use, therefore, can it be? The practical developers suggested to be compounded with "acetone-sulphite," all, I believe, contain alkali, showing that the

"acetone-sulphite" does not take the place of either acetone or alkali in the developer.

But "acetone-sulphite" is most emphatically urged as a substitute for sodium sulphite or potassium metabisulphite in their various applications. Each packet that I have seen is labelled with a statement that as a substitute for the more usual sulphites it is equivalent to them in the following proportions:

Acetone-sulphite.	Crystallized Sodium Sulphite.	Potassium Metabisulphite.
1	8 to 10	¾ to 1

If we calculate the relative efficiencies on the basis of the sulphurous acid we get the figures

1	1.55	0.68

assuming in each case that the compound is pure and that the "acetone-sulphite" and potassium metabisulphite are perfectly anhydrous, and that the crystallized sodium sulphite contains half its weight of water of crystallization. I cannot understand how the figures on the label have been got at. The value of "acetone-sulphite" as compared with potassium metabisulphite is a little overstated. But if "acetone-sulphite" is as effective as eight to ten times its weight of ordinary sodium sulphite, it must be as a preservative for ready prepared developers or stock solutions, and not as a preservative during development. That is, the "acetone-sulphite" acts both as a sulphite and an acid (and we know that a very little of almost any acid will preserve pyrogallic acid, for example, in solution), like the potassium metabisulphite, while obviously the sodium sulphite, which is generally slightly alkaline, acts as a sulphite pure aud simple. During development the acidity of the sulphite is an unmitigated disadvantage, for it must be neutralized by the alkali added, and too often an altogether enigmatical amount of the alkali added is thus rendered unavailing for direct developing purposes.

In order to get a practical idea as to the relative values of "acetone-sulphite" and sodium sulphite in development, I prepared two similar solutions, each containing the same amount of pyrogallic acid and the same amount of sodium carbonate and the same total amount of sulphurous acid, but this last was added in the one case as sodium sulphite, and in the other as "acetone-sulphite." The solutions were poured into two separate flat dishes and exposed to the air. The darkening took place equally in the two dishes, showing that the proportion of "acetone-sulphite" to crystallized sodium sulphite that is equally effective during development is as calculated, as one to one and a half, and not, as stated on the label, as one to eight or ten. The "acetone-sulphite" when dissolved is acid and behaves like an acid sulphite, as will be shown more in detail below. I therefore neutralized the solution, so that there was the same amount of free alkali in both cases. For the neutralization, phenolphthalein was used as indicator. It would appear, therefore, that the value of "acetone-sulphite" as a substitute for other sulphites in development is, like other sulphites, simply proportional to the sulphurous acid that it contains.

It remains, therefore, to see whether "acetone-sulphite" presents any points of superior convenience when compared with other sulphites. It is claimed that it is "completely durable" or "perfectly permanent," both in the solid form and in solution. Dr. Eichengrün, in comparing it with sodium sulphite and potassium metabisulphite, says that both these sulphites are of inferior keeping qualities, and by loss of sulphurous acid they become deteriorated. Of course, as a matter of fact, sodium sulphite does not lose sulphurous acid. As to the stability of "acetone-sulphite" I was much disappointed, as, although there was no odor emanating from the solid, the simple act of dissolving it in cold water caused the distinct evolution of both sulphur dioxide and acetone, and the decomposition was much hastened by gently warming the solution. To get a further idea as to the stability of the substance, I put some solution in a flat dish and left it for three days. The solid residue, for the solution had dried up, contained very little sulphite and a very much greater proportion of sulphate than the original. I treated some sodium sulphite similarly. After one day it had dried up, so I dissolved the residue again and left it another day to dry up a second time, exposed to the air. Of course, much

oxidation had taken place, but there remained still quite a notable amount of sulphite; and the opaque white powder, after being freely exposed to the air in a dish for two days more, still effervesced with evolution of sulphur dioxide when dilute hydrochloric acid was added to it. Thus I fail to find any practical difference in the stability of solutions of the two sulphites when exposed to the air. I think if any difference in stability is evident it is in favor of the sodium sulphite rather than the other. I found that a solution of sodium sulphite six months old contained notably less sulphate than a solution of "acetone-sulphite" one day old, and that solid sodium sulphite from an ordinary corked bottle that had been opened and partly used more than six months before, and closed only with the original cork, contained less sulphate than the new sample of "acetone-sulphite." As to the supposed want of stability of sodium sulphite in solution, I do not find any notable deterioration after a year, and it has long been my custom to prepare a stock of sodium sulphite solution once a year only, bottling it up in three-ounce bottles.

One advantage claimed for "acetone-sulphite" is that it can be had in 50 per cent. solution. I cannot prepare a 50 per cent. solution from my sample, and any attempt to facilitate solution by warming causes copious decomposition. Possibly so strong a solution as that claimed may be prepared as the substance is manufactured, but I failed to prepare it directly from the solid. My sodium sulphite I always prepare in 50 per cent. solution, and find it a very convenient way of keeping it for use. In cold, wintry weather sometimes, not always, a part will crystallize out. But a 50 per cent. solution of sodium sulphite contains only as much sulphurous acid as a 33 per cent. solution of acetone sodium bisulphite, which is what "acetone-sulphite" appears to be. The "acetone-sulphite" doubtless, therefore, has an advantage in this matter.

As a further difficulty in dealing with "acetone-sulphite" in strong solution, I found that the strongest solution I could obtain with the excess of solid in it that would have dissolved if a 50 per cent. solution had been obtainable, after being left in a stoppered bottle about two-thirds full for three or four days, had deposited some large, colorless, quite transparent crystals. These when warmed with dilute hydrochloric acid gave a fairly copious precipitate of sulphur, a reaction that takes place with the original substance (the "acetone-sulphite"), but to a far less extent. This shows the presence of some other sulphur compounds, and the odor confirms the observation.

It is claimed that "acetone-sulphite" may be used as a restrainer in development. It can hardly be supposed that the acetone has anything to do with the restraining action, as it facilitates development even in the absence of an alkali. The "acetone-sulphite" is acid, perhaps because of the decomposing action of water upon it, and of course any acid will restrain development. The "acetone-sulphite," like any acid sulphite, would reduce or neutralize the alkali present, and cause a normally exposed plate to appear underexposed.

The action of "acetone-sulphite" in fixing baths is presumably like any other acid sulphite, and I do not think that it is claimed to be superior. The modification of the color of the image in prints developed with alkaline developers containing "acetone-sulphite" I can say nothing about from direct experiment, but it accords with general experience to find that the presence of an additional substance varies the nature of a deposit of a reduced metal. Here the new reagent may be found of advantage. It would be well, however, to know what the "acetone-sulphite" contains, for the sample I have experimented with must contain other sulphur compounds than sulphites and sulphates, though, perhaps, in very small proportion. It seems not impossible, however, that they may increase by exposure or by simple storage.

Summing up, therefore, I find that "acetone-sulphite" has an advantage in the matter of solubility, but no practical advantage in stability; that it has the disadvantage of any acid sulphite in development of requiring a certain (and perhaps unknown) quantity of alkali to neutralize it, but the advantage of all acid sulphites as a preservative for solutions of develop-

ing agents, unmixed, of course, with alkali; that in development its use is simply proportional to the sulphurous acid that it contains; and, finally, that it would be desirable to have definite information as to the foreign sulphur compounds in it, because it is at least possible that they may be detrimental.

Undoubtedly our thanks are due to those who have placed this substance at our disposal, for although I cannot regard it as so important an addition to our reagents as some others do, it certainly has its peculiarities, and may in use prove advantageous in ways that have not yet been suggested.

THE PHOTOGRAPHER AND HIS CONVENTIONS.

THERE is a considerable amount of twaddle and nonsense written about the photographic conventions. Much of this stuff comes to us from misguided association officials, good men and true, who want to "boom" their association meetings, but have nothing of interest to say or who do not know how to tell the points of interest. We suppress some of this "copy," not daring to inflict it upon our readers, even for the good of the cause. Such as we publish is generally rewritten or edited, but this is a difficult labor, akin to making bricks without straw, the "copy" supplied rarely giving particulars of definite interest, and consisting largely of "gush" pure and simple. For our own part we are earnestly in favor of conventions, and have always lent our pen and pages to their support. We, therefore, republish with pleasure the following article from *Trade News*, of Louisville, presumably written by Mr. F. E. Gatchel, the editor of that journal. The article refers to the Kentucky and Tennessee Convention at Chattanooga, June 16, 17, 18 and 19, but it applies with equal force to all conventions and those who support them. Mr. Gatchel has a message to the craft and delivers it. We indorse all he says as sound and much needed.—[ED. W. P. M.]

It is possible to be a member of a flourishing State Association and not be enthusiastic over it, and not have any pride in it, but the members who find themselves in this condition have not entered it in the right spirit, and have not kept up their interest and have not received the benefits that are to be derived from the convention.

Kentucky and Tennessee have had their conventions now for two years, and have just begun to see the effects of it upon the business of the galleries throughout the two States. The competition has not slackened at all; in fact, it is stronger than ever, but the amount of business done is greater, and the amount of money taken in is also greater. The association may in no way be responsible for this, but still it is a fact that, as a rule, it is the men who have gone to the conventions in the right spirit, who are showing a steady increase in their business; whereas those who have, either for reasons of economy or lack of pride, staid at home, are just where they were five years ago.

A part of the policy of the State Associations is to hold its meetings in the different States and in different cities whenever possible, so that the men who are lacking in means may be able to avail themselves of the opportunity of being present at a very small outlay.

The first year the Kentucky and Tennessee photographers held their convention in Nashville, which was convenient to the middle of Tennessee and Kentucky. The next year it was held at Louisville, where it was handy for all the Kentuckians. This year it will be in Chattanooga, Tenn., where it will be convenient for every photographer in central and eastern Tennessee and Kentucky, and as there are a number of photographers in this section that have never attended a convention before, there should be a larger crowd than ever before, for the members who went to the first went to the second, too, and those that went to the second will go to the third, with very few exceptions.

These members will, of course, be the bulk of those present, and they come year after year, either from pride in their association, or from the good that they know

that they receive, and expect to receive later. If they do not get any good out of it, they would be foolish to spend their money for something that is extravagant; but if they do get any good out of the convention and its work, then they cannot say that it is an extravagance to spend money for this purpose, because they get good returns for their money, and money profitably spent is not extravagance.

In order to get the good out of the convention, it is necessary to prepare for it and enter into it with some thoughtfulness and planning. Those who go out of curiosity, and think that they will float around on the outside and see how they like it, are pretty sure to be disappointed in these later conventions, for the members who have been to the former ones know each other, and they mix together easily and quickly, and the man who is floating around on the outside, will not receive the attention that he thinks he is entitled to, and if he is inclined to be "touchy," his feelings will be hurt, and he will not carry away a very good opinion of the conventions. On the other hand, the man who will prepare, and get some work up that represents his average efforts, and takes it down to be exhibited, having the bravery to let his work go on the walls alongside of men that he feels have had more experience, will be admired for his effort, and if he does not come within smelling distance of a prize, he will find that he is one of the crowd, and has the same interests that others in the same brotherhood have, and he will go away feeling that he was a part of the convention just as much as the man who won the most prizes.

He will have made acquaintances that the next year will cement into friendships, and he will find that he is better off for having spread out into broader spheres and met new men, and seen a different kind of work from that to which he has always been accustomed.

When a member has reached this stage he will have a feeling of proprietorship in the body of which he is a part, and so long as that body is in a flourishing condition, and the work that it does is good, he will take pride in the fact that he has an active interest in that success, and that he has a right to enjoy every benefit that can accrue from his membership, and that it is his duty to do, in whatever small way it lies in his power, to promote the efficiency of work of the association. He can do this by doing promptly and well what the officers ask of him. If they send letters asking for a picture for the souvenir, let the man who is a member of the association, and who has some pride in his membership, answer the letter at once, stating whether he intends to send a picture for this purpose or not. If he decides to put a picture in, which he should do, let him get it up at once and send it without delay, and write to the secretary at once telling him that he will send it. The officers are made more work by the negligence of the members to give attention to the letters sent them, than anyone has an idea, for each member has to be looked after, and if the first letter is not attended to, another must be sent, and, as the secretary has about all the work he can comfortably do without this extra labor, it is a rank injustice on the part of the members to make him all the extra work of trying to keep them up to their duty.

When the Vice-President states that the exhibits must be at the convention hall before the convention opens, or they will not be allowed to be entered for competition, it is the duty of every member to heed what he says, and send their pictures at the time he asks, and not think that if they bring their work along that it will be hung, because they know the officers, and they can't refuse. This is simply an endeavor to break the rules, and no man who has any pride in his association should think of doing this.

The way to do the work that each member can do to further the welfare of the association is to do his or her part to make the whole machinery work smoothly, and lighten the labors of the officers and those who give their time to the work of the convention.

Get your ideas for pictures into shape now. Determine to have your work ready for exhibition a week ahead of the time that it must actually be there. Begin to look up a picture for the souvenir, and when you get the Secretary's letter, answer it at once, and send the picture to him

without compelling him to write you two or more times.

When the year's due bills are sent out, pay your dues, and so lighten the work of the Treasurer. Get your pictures to Chattanooga the Saturday before the convention, and so lighten the work of the Vice-President. Let each member have enough pride in his association to do those little things that will make the convention a success, and will give the officers the proper encouragement to put forth their utmost efforts to accomplish more for the good of the members.

If they are hampered by negligence on the part of the members, they will be compelled to devote time to jerking up the delinquents, that they could be employing to better advantage on new work of promotion, and the members who have not enough pride to do the little that they are asked to do, are the ones who do the most to prevent the affairs of the association from working smoothly. Let everyone keep these things in mind, and let each bear a hand and try to make the coming convention at Chattanooga one that will be a pattern by which to model all future conventions.

THE PHOTO-MINIATURE SERIES.

MORE than a year ago we called the attention of our readers to the series of handbooks published by Tennant & Ward, of this city, under the general title of *The Photo-Miniature*. The growth of the series and the admirable way in which it sustains its interest and usefulness deserves further notice. The plan of *The Photo-Miniature*, as many photographers know, is to present in each number a complete handbook dealing with some photographic subject of every-day interest. The series now includes forty-seven numbers, covering as many different subjects. From among these the professional photographer can readily select a very practical library for reference in his daily difficulties, thus obtaining at a slight cost a mass of useful information not readily obtainable elsewhere. The different subjects are handled simply and comprehensively, the instruction being given in a plain and practical way, no point of importance being glossed or omitted.

In choosing a professional photographer's library from *The Photo-Miniature* series the following numbers claim first attention as peculiarly adapted to professional needs: No. 46, Development Printing Papers (Velox, Cyko, Vinco, etc.); No. 45, More About Orthochromatic Photography; No. 44, Coloring Photographs in Water-colors and Oils; No. 43, Photographic Chemicals: Their Preparation and Uses; No. 42, Genre Photography; No. 41, Copying Methods, with illustrations by Hollinger; No. 36, Lens Facts and Helps; No. 35, Enlarging Negatives; No. 34, Development with Pyro, Metol, and Ortol; No. 30, Photographing Interiors; No. 29, Flashlight Photography; No. 23, Photographic (chemical) Manipulations; No. 21, Albumen and Plain Paper Printing; No. 20, Trimming, Mounting and Framing; No. 19, Photographing Children; No. 18, Chemical Notions for Photographers; No. 17, The Carbon Process; No. 16, Bromide Printing and Enlarging; No. 15, Intensification and Reduction; No. 12, Retouching Negatives and Prints; No. 7, Platinotype Processes; No. 6, Orthochromatic Photography; and No. 2, The Pose in Portraiture.

These twenty-three monographs, we may safely say, contain more definitely useful instruction on photographic manipulation than any other work of photographic reference published since the appearance of our *Cyclopædic Photography*. We have read *The Photo-Miniature* with increasing pleasure and profit as it has been published month by month during the past four years, and again recommend it to all progressive photographers as an investment which they should not neglect. It is important in these days of strenuous competition that the professional photographer should keep abreast of the times in information. *The Photo-Miniature* series read in combination with this MAGAZINE offers a liberal education in photography and a store of practical knowledge in the progress of our art. Every photographer in

America should have them both on his work-room bookshelf and turn to profit the helps they offer him.

If there be a reader of these pages to whom *The Photo-Miniature* is unknown, we advise him to send 25 cents to Messrs. Tennant & Ward for a copy of the last number of the magazine, viz., No. 46. The treatment of *Development Printing Papers* therein outlined will demonstrate the value of the series better than any words of ours can do. That number is, as an authority on development papers expressed it, "A little masterpiece;" brief, yet full of information, plain, practical, and to the point. An extract from its pages is given elsewhere in this issue of the MAGAZINE.

MOUNTING PRINTS WITH RUBBER SOLUTION.

BY W. L. NOVERRE.

IT has been frequently stated that mounting with this material is impracticable, that after a short time the rubber becomes rotten and the print leaves the mount. The writer has frequently used this mountant, and has now in his possession prints so large as 15 x 12 inches, which were mounted with it more than ten years ago, and are as firmly attached to the mounts as the day they were mounted. The failures that have been met with have probably arisen from the use of too thin a solution of rubber, and possibly from the use of an unsuitable mounting surface.

The solution of india-rubber sold by photographic dealers for mounting is useless for the purpose. What is required is the cement used by makers of india-rubber goods—not the dark stuff sold in tins, but a solution of pure rubber in benzole, so thick that it cannot well be applied with a brush. It would be better for small prints if made up somewhat thicker; this end may be attained by squeezing the contents of the tube into a wide-mouthed bottle, and stirring with a piece of stick till a portion of the solvent has evaporated.

To use this material, the trimmed print is placed face down on a piece of paper, and the cement is spread on it with an artist's palette-knife, or a well-worn table-knife. Some cement is taken on the end of the knife, and laid on the print, the knife is held with the forefinger on the blade an inch or two from the end, and the cement is quickly spread, considerable pressure being used to get as even a layer as possible; an ample quantity of cement should be used, the superfluous material being worked off with the knife. The print is next laid in position on the mount, a piece of paper laid over, and the print well rubbed down with the tips of the fingers, and finished, if necessary, with the boxwood rubber advised for dry mounting, particular attention being paid to the edges and corners. Should any cement get on the mount it must be left till nearly dry, and may then be removed by gentle rubbing with the fingers or with a piece of clean india-rubber.

Prints mounted by the above method remain perfectly flat, however thin the mount may be. The plan answers well for mounting on plate paper mounts, and all lightly sized mounts, but with those strongly sized or glazed, it is safer to spread a layer of cement on the mount as well as on the print in the manner to be explained further on. Regarding the quality of paper on which the photograph is printed, the process will be found very suitable for thick and rough papers, but more care is required to get a smooth surface with thin papers, because it is difficult to get a perfectly even layer of the rubber cement, and the slight unevenness shows through on the face of the print; to obviate this, the cement must be laid on as evenly as possible, and the surface carefully smoothed down with the boxwood rubber.

A good plan with thin paper is to coat both the print and the mount with cement, and then use the boxwood squeegee described above, the procedure being as follows: lay the mount on a thick glass plate, place the print upon it, and mark lightly with a pencil where the four corners are to come; remove the print, and proceed to spread the cement on the mount, so that it

extends just beyond the space to be occupied by the print, this being shown by the pencil-marks; next apply the cement to the back of the print, place it in position on the mount, lay a sheet of thin paper over, press the print down on the cement, and apply the boxwood squeegee, working it with even pressure from about the centre of the print just beyond the right-hand edge; now turn the mount round, and treat the other half in a similar way. One application of the squeegee should suffice, as it is desirable not to press out more of the cement than can be avoided, more or less of it will ooze out at the edges of the print, and no attempt must be made to remove this till it is nearly dry, as already explained. Before using a mount for this method it is necessary to ascertain that the superfluous cement can be rubbed off the mount without leaving a stain. It can be removed without difficulty from plate papers and lightly-sized mounts generally, and from all dark-tinted mounts, glazed and unglazed. India-rubber answers well for mounting photographs in albums, and as the prints are kept flat by pressure when the album is closed, it will suffice to stick them down by the corners only, applying the cement both to the print and the mount; that applied to the latter need not extend quite so far as the edge of the print, whereby the risk of staining the mount will be avoided. The cement for this purpose should be rather thicker than is required when the whole print has to be covered.—*Amateur Photographer.*

LIGHT PRINTING—A COMMON TROUBLE.

In the last number of the *Aristo Eagle* Mr. T. W. Pattison calls attention to this general evil. We republish his article:

"One of the greatest mistakes we find in the printing rooms is too light printing; especially is this true where double toning is used as with Aristo-platino and Collodio-carbon papers. Mr. Walter E. Woodbury in his encyclopædic dictionary of photography says: '*It is a well-known fact in photographic chemistry that permanency of the image depends largely upon the amount of metal deposited.*' This being the case it is doubly important that we have a strong deposit of reduced silver to start with, giving a good base for the gold and platinum to deposit on, assuring the permanency of the image. This can only be accomplished by *printing to a good depth.* Any paper allowing strong, deep printing will always give more permanent results than a paper which requires lighter printing, thereby giving a weaker deposit of reduced silver. The writer has found many photographers printing too light, but they would not admit it until it was proven to them, and then they were astonished at the *difference* in the finished prints when they have been printed to the proper depth; for too light printing will give weak, flat finished prints, and the trouble is often blamed on the paper when it is entirely the fault of too light printing. Often photographers will claim that the prints bleach in the platinum bath. This is never the case. What really happens is that the prints become lighter in the platinum bath. If they *bleached* they would cut away in the high lights, but, instead, they lighten up all over, shadows as well as high lights, and this trouble is always caused by *too light printing.* Photographers sometimes complain about not being able to get black tones on Collodio-carbon, and when investigated the trouble is found to be too light printing.

"It will pay any photographer having any of the above trouble to try an experiment the next time he prints. It will not be much trouble and will pay well. Let us suppose, for instance, you have an order for six prints from a negative. After the six are printed to the same depth as you have been accustomed to, print another a little darker, then another still darker. Do this with several negatives and tone them out together, and when they are printed examine and compare the darker prints with the regular printing, and you can very readily determine if you have been printing to the proper depth. This experiment will pay many photographers to try, as there is a large amount of poor prints turned out to-day, due to insufficient printing."

COPYING PHOTOGRAPHS.

BY ROBERT MELVILLE.

An up-to-date photographer is an all-round man. If he would achieve success he must be ready to take up any business that comes his way. Ready, too, to *make* the business come his way. Every-day portraiture is and will remain the staple and backbone of all business, but the side-lines are usually added lines—as much "found money" to swell the net profit. Side-lines often make the difference between loss and gain. The stock-yards of Chicago (when beef sells at normal) make their margins out of what is waste to a village butcher. The mediæval "buses" which amble along the streets of London return handsome dividends to their owners, but the receipts from the advertisements which are pasted over the buses pay every dollar of those dividends. The value of a specialty has been repeatedly, and wisely, urged in Wilson's; and the specialty is not, usually, a leading line—in point of production—but a line which produces *extra* money.

One of the soundest side-lines in connection with photography is copying. There is an old theory abroad, especially with the country photographer, that copying is hard work. At least it is careful work. But no man is likely to succeed in photography unless he has, at the least, a capacity for taking pains. And beyond a moderate amount of painstaking there is no especial difficulty. Copying should be as much in evidence as enlargement. There is one phase of copying which is too frequently lost sight of; the old-time pictures are very often in the hands of people who possess money. The old daguerreotypes and ambrotypes figure on many a wealthy mantel; and copying should by no means be relegated to the limbo of tintype.

If copying is carefully done the copy is usually a manifest improvement on the original—the customer can see the difference. The faded yellow of an old-time "silver print" is not in the reproduction, and the latter looks pluckier and more vigorous than its original.

Perhaps no reproduction is more beautiful than one from a daguerreotype. The grainless delicacy of the original yields a print without any trace of that mealiness so apparent in many reproductions from paper prints. At the same time, the best results are obtained only by great care and delicacy in handling. The first act with many would-be copiers is to "restore" the original; it should be the last thing thought of, except in case of absolute necessity. Sometimes a daguerreotype is tarnished over its entire surface, and in such a case the customer may elect to risk its restoration. There is no real difficulty in this, but if a mistake is made it is usually fatal. Although so permanent, the silver film is exceedingly delicate, and must not be fingered. Dust it very lightly with a soft camel's-hair mop, and hold it by one corner with a pair of pliers. The clearing solution is a weak potassium cyanide one; 3 per cent. is a suitable strength. Rinse the plate, held by the pliers, in running water; and while wet flow it with the weak cyanide solution. Let this flow over the plate, and then drain it back into its bottle or graduate. Do this several times, until the stain disappears and the picture appears as clear and brilliant as ever. As soon as this point is reached wash well in running water, and then at once, before the water collects into drops dry the plate over a spirit lamp, the heat being applied to the back. The plate should be held slopingly, and to dry first at its upper corner. There must be no hitch in the drying; the water must steam steadily off, or the plate will show a mark. And if the heating is too slow there is a risk of the silver film shelling from its support. *Pure* water is often urged in photography: in daguerreotype restoration it is very necessary. As soon as the picture is dry it should be restored to its case, and sealed around the edges with well-pressed down gummed paper to exclude air. It may again be emphasized that restoration should be only a last resort. Even when the plate is tarnished it is often better to attempt copying before trying to restore the picture. In copying daguerreotypes the reflection difficulty will probably

occur. It can best be got rid of by a black tunnel, reaching from the camera almost to the portrait; or the tunnel may resolve itself into a box, dead black, or velvet lined, with the plate against the end, and the light admitted through holes in the sides of the box. In all copying work the camera should be covered by a black cloth, with a hole just large enough to let the lens peep through.

Perhaps the fundamental mistake in copying, particularly in copying daguerreotypes, is over-exposure. This does *not* mean under-exposure; but give a generous exposure and develop for the lights. Don't kill these in an attempt to extract all the detail from the shadows, or flat prints will result. Develop for the lights, and the shadows will usually turn up satisfactory.

Glass positives or tintypes are subject to the same rules as the daguerreotype, except in the matter or manner of their delicacy. The old glass "positive" or ambrotype is really a weak, thin, negative, backed up by some black material which, showing through the clear glass of the shadows, reverses the nature of the print. Where the black is partly worn off a new coating should be given, or a piece of black velvet may be pressed against the back of the picture. Never attempt to clean the black varnish from an ambrotype without first being quite sure that it is not coated on the film side, as is often the case. If the print was in the beginning backed with black velvet, instead of varnish, it may be used as a very thin negative and a direct print obtained. Retouching negative copies is usually a mistake; a reproduction from an old-time photograph should retain all the old quaintness of the original. To transform it into twentieth century work is not only vandalism, but is also rank bad business.

The copying of paper prints is in some ways easier than the copying of earlier kinds of work. The usual troubles to contend with are fading and yellowing. An ordinary plate is better than an orthochromatic one, unless the photographer understands these and when to use them. The yellowness may be counteracted by placing a blue screen in front of the print. What part of it has faded away is beyond the reach of any camera, but a print from a correctly made negative will be more vigorous and without the faded suggestion of the original.

I have not touched on the working-up of the paper print. The general advice "don't" is good advice. But where they are to be worked up they fall to the spotter, who must beware of doing too much. And where possible it is better to work on the resultant print rather than on the original.

Copies, like portraits of to-day, give scope for the exercise of taste in trimming and mounting. In the original, mounting as we understand it to-day is non-existent; and it is more than probable that the spacing can be improved by the trimming knife. These are perfectly legitimate points, and are worth careful consideration.

A few copies, preferably enlarged, and *with* their originals, should be in every reception-room. They will advertise themselves and draw business. The copy will look well on a broad, white, tinted centre mount, in a simple wood frame, very plain and narrow and probably light in tint; the original photograph close to the frame in one of the lower corners.

NEWS AND NOTES.

Photography in Colors Again. According to a news report, Professor A. B. Leckenby, the United States agrostologist at Union, Oregon, claims not only to have made colored photographs by the use of the ordinary camera and apparatus and some special chemicals of his own, but has exhibited the prints in Portland. Dr. Leckenby's method, which has not yet been made public, will, it is declared, produce a photograph with every color showing. By his method a photograph of a bunch of flowers will show the natural colors. As far as now known the new method is the same as the old system of photography up to the act of making the print. The plate used is a Cramer isochromatic, such as are in use every day by enthusiasts. The difference lies in the emulsion on the sensitive paper. The slight differences in

the shades on the negative plate are just enough to act in different ways on the paper during printing, and produce the several colors, and after the toning and fixing operations, which are also probably unlike those in present use, the picture comes out resplendent, in colors instead of all the same or sepia tone. Up to the present time only one fault has been found with the pictures. They are not all the same shade. A red rose may show pink at one time, and with the next tone and fixing a dark crimson. In either case the color will still be red, but the shades will be decidedly different. Even this objection, which is not in itself very serious, Dr. Leckenby thinks will be remedied, and he has, he says, worked out a method which will have the effect of bringing the various prints to a more even tone. It is generally understood that Professor Leckenby will not patent his discovery or try to make money from it, but he will give it to the world. He is, however, taking steps to procure the necessary papers to secure for himself the honor of having discovered the new method and to prevent anyone else from using it as a money-making scheme.

The Photographers' Safeguard. In every trade there are always two classes of goods, and two styles of concerns which make and sell them. There are the honestly made goods from the factory managed on healthful, enduring business principles, where the best of materials is used, the most careful inspection at every stage of the manufacture is exercised, resulting in the production of standard goods of reputation. For every such article of merit so manufactured there are always many shoddy imitations made by a different class of manufacturers, concerns whose policy is to produce by cheap materials, cheap, unskilled labor, and to give the impression that they have as good an article for less money.

There are always irresponsible dealers in every trade who are willing to handle these shoddy goods and help such manufacturers to deceive the public, for the money there is in it, and there is always a class of consumers who are willing to be taken in again and again by such propositions.

What is true of all trades in this regard is particularly true in the line of photographic materials. There is no line where true economy is so dependent upon the use of honestly made goods, and where temporary deception is so easy.

The only safeguard of the photographer is to confine himself to goods of unquestionable reputation made by responsible manufacturing concerns backed by reputable dealers. So long as the world goes on there will always be the standard article and the shoddy imitation of it. The *good* business man will always be the consumer, dealer, or manufacturer of the standard article. The follower of false economies will always constitute the consumer, dealer, or manufacturer of the shoddy.—*Aristo Eagle.*

One of the latest novelties, if we may so use the term in connection with chemicals, says the *Dealer*, is Merck's Flash-Light Tablets. These are so prepared that the smaller half of the tablet receives less pressure. This part can, therefore, be easily broken off and reduced to powder between the fingers. Each tablet contains one gramme of magnesium flash-light mixture, which is sufficient for taking one cabinet photograph. We have made one or two exposures by means of these tablets, and have found them eminently satisfactory. The manufacturers state that: Experiments have proved that the flash-light mixture in compressed form develops a considerably higher temperature than the loose powder, and hence the actinic power is increased. Further, the compressed tablets produce about four times the area of light, whereby the deep shadows are avoided, and a result equal to daylight exposure is approached as nearly as possible. The flash-light mixture does not explode either by rubbing or striking, which is the case with those mixtures containing chlorate salts; it burns without smell, and with very little smoke, and contains no harmful or poisonous substances.

Labels on bottles sometimes get much smeared by the drops which trickle over them. If the pourer would only hold the bottle with the label side uppermost when pouring, the drops would not trouble him.

BERTHA

By C Durand Chapman

PORTRAIT GROUP

By C. Durand Chapman

PORTRAIT GROUP
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THE PICTURE BOOK
By C. Durand Chapman

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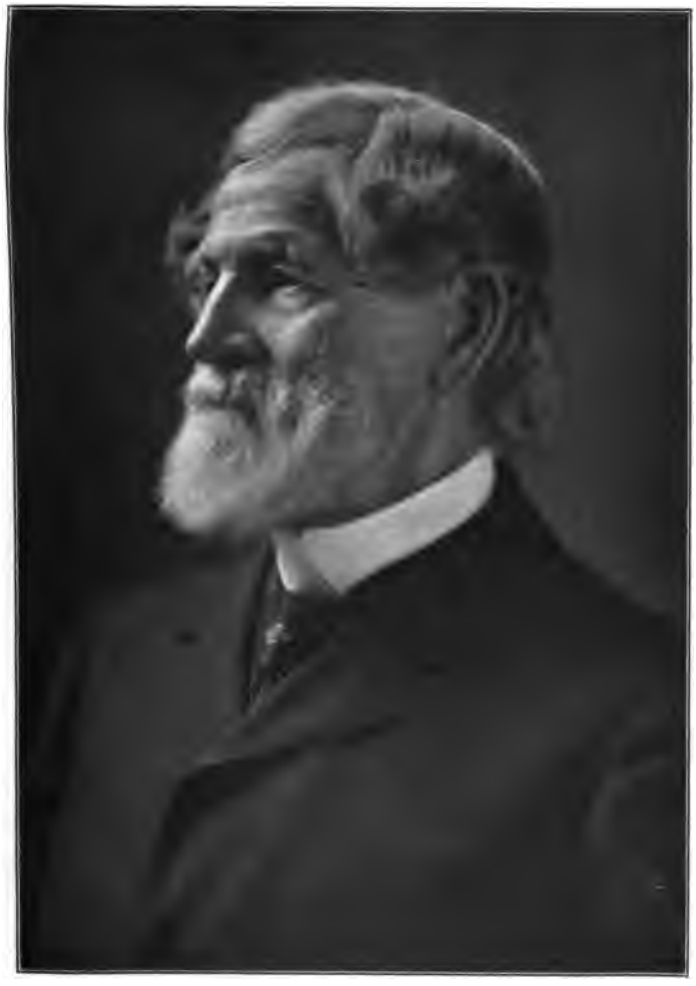


PORTRAIT

By C. Durand Chapman

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig 5

Fig. 6

Accompanying "Notes on the Hands."

THE HANDS IN PORTRAITURE.

(With Illustrations by the Author.)

BY REV. F. C. LAMBERT.

How to arrange and light the hands of our sitters is one of the several problems that is very frequently facing us when on portraiture intent. Of course, we may evade the difficulty by taking head and shoulders only, or by hiding the hands behind the body, or covering them with drapery. This course is not only unworthy of the artist, but also extremely foolish, because the hands of most people are a very important part of their living pose. Every thoughtful reader of these notes will, after a moment's pause, readily recall some friend who has some trick-habit with his hands. One "twiddles" his watch-chain, another grasps the lapel of his coat, a third puts the tips of the fingers of both hands together, etc. Now these little tricks of habit are an integral part of the "*tout ensemble*" which together make up the outward and visible portraiture of the man, for it is a grievous but common mistake to think that portraiture consists in making a map of a person's face. Human nature and character together form an exceeding complex and subtle whole. To this all parts of the body contribute. The head, of course, is the chief, but it is by no means the only factor. Among these factors certainly the hands occupy a very important position.

In the present chapter we propose to confine our attention chiefly to the subject of hands as a part of characteristic portraiture. And, lest there be any misunderstanding, let it be said at once that these notes and illustrations are to be taken as suggestions only.

The thinking worker will very properly hesitate in accepting anything like rules of procedure. He will wisely wait to judge for himself, compare his own practice and observations with others. Try a few experiments in verification or refutation and so on. The purpose of these random notes is to stimulate and encourage each worker to look, think, and experiment for himself.

The reader and writer presumably will agree upon one point which very soon forces itself upon every observant portraitist, viz., that the hands of his sitters vary almost as much as do their heads and faces. Their hands may be large or small, fat or thin, long or short, narrow or wide, large or small boned, smooth or wrinkly, clumsy or graceful, restless or active, and so on *ad infinitum*. We next observe that the hand is nearly always in harmony with the rest of the body. Tall and lanky people have long and narrow rather than short and wide hands, and so on. Moreover we are soon led to observe that frequently one may observe a harmony between the mental character and the hand. Thus a high-strung, delicate, nervous, or artistic, active minded temperament is usually accompanied by delicately shaped and gracefully moving hands and fingers, just in the same way that a coarse character is frequently accompanied by large, rough, clumsy hands.

Again, age is to some extent indicated by a certain subtle but indescribable something on the hands.

Other indications might be adduced, but probably enough has been said in this direction to prompt the reader who has not already noticed these things for himself to begin to do so at once.

In our first illustration we show the right hands of five different people—all women folk, of ages from twenty to sixty years or so, and of considerable variety or difference as regards figure or build. It is easy to arrange them according to age, thus: C., A., B., D., and E., the youngest of the party. It is also easy to see that they are all different in outline and general character. Note that the lighting and general pose is sufficiently alike in all cases for comparison. The operator behind the camera asked them all to hang their hands "something like this," over the top rail of a clothes-stand. It will be seen that each one has given a different interpretation of the object lesson. The best imitation is probably E. In this way we may see a practical example of degrees of observa-

tion and imitation, power, gracefulness, etc., in different people.

We next learn from this experiment that, although the several hands are all in a somewhat similar position and lighting, yet considerable differences of shape and size are suggested by the various arrangements of the fingers. For instance, C. is stiff and trim. B. somewhat formal and too regular. D. is apathetic—experimenter. A. and E. are more agreeable in outline and variety of form. Thus we are led to infer that variety of outline, A. and E., is more pleasing than a too symmetrical form, C.; also that the turned fingers of E., B., A., are more graceful than the stiff arrangement of C., or lifeless limpness of D. We must also notice that light and shade on each hand are largely determined by the arrangement of fingers, and that this light and shade play a very important part in showing up or hiding this or that character. For example, the flat lighting of hand C. draws attention to every finger, and shows the fingers to be thin, with wrinkled skin. In B. the curving of the finger ends puts them in shade, and so, apparently, shortens them. In E. each finger is shown to full length, but their curved nature gives a pleasing variety of form and lighting.

So far as regards comparing different hands. And now a note or two as regards the two hands of the same person seen in different pose, lighting, etc. Now let us compare Figs. 2 and 3. Here we have the two hands, placed together, of the same person in the same studio lighting and at the same distance from the camera. A rapid glance is enough to tell us that in Fig. 2 the hands look larger than in Fig. 3.

First we notice that they are further apart. Next we see that the hand part of our study is chiefly occupied with the backs rather than the fingers. Again, these backs are presented full face to the lens—*i. e.*, not edgeways. And yet again they are in strong light rather than in shadow. Now all these factors together tend to make the hands look large.

We all know the common complaint of photography making the hands too large. Of this a word presently. But now let us turn attention to Fig. 3. Note the difference. The hands are closer together, and one over the other instead of in a row as in Fig. 2. The backs of hands are little seen; in fact this part of our picture is chiefly made up of fingers; also the hand is presented to us edgeways rather than with the back of the hand full face to the camera. Moreover, the fingers are all well curved—not stiff or straight, the lines of shade between the fingers thus tending to cut off the space. We have a more pleasing variety of light and shade generally in Fig. 3 than in Fig. 2. We may thus deduce the following hints for studio experiment and practice. Avoid spreading the hands out when they are together. Show edge rather than the flat of the back to the lens. Let the fingers be curved rather than straight, etc.

In Fig. 4 we see the difference between showing the inside and the outside of the hand. The sitter's right hand is nearer to the lens than is her left hand, so that we might well expect the right to come out looking the larger of the two. But the contrary rather the case. This is due to two contributing causes. First, the nearer hand is turned slightly edgeways to the camera, and, secondly, in the one case we see the back, in the other the inside of the hand. In the further hand the fingers are rather more stiffly posed and the light falls on them more than on the nearer hand. Thus we may take the hint that distance from the lens is *not* the only thing to think of when we wish to make the hands look large or small. Note also the effect of a light or dark background behind the hands in this instance.

In Fig. 5 we have an object lesson in the matter of lighting. Here the two hands are more or less similarly placed against the same kind of background. The sitter's right hand, however, is in shade, while the light falls full on the back part of the left hand. In consequence, the left hand seems a size or two larger than the right one. The contrast effect of background is also here illustrated.

In general one may perhaps say that contrast of lighting tends not only to draw attention to the hands, but tends also to make them seem larger than harmony of lighting. And also it seems to be in general true that a light hand against a dark background seems to come out larger

than the same hand in shadow against a light background. Space available only permits of one more example viz., Fig. 6. This in some measure illustrates the last remark. The sitter's right hand is more or less in shade, and comes dark against a light ground—while her left hand in moderate light comes as a light against a dark ground.

This example is given as a sort of antidote to all that has herein been said. There is a possibility that some reader may be tempted to pose the hands of his sitters—in consequence either of some preconceived notions or experiments which he may make. This we venture to think is, in general, a mistake. Perhaps the old saying *ars celare artem* applies to hand posing more than any other part of portraiture. The posing must be so deftly done that the sitter does not know that it is being done at all. This sounds contradictory nonsense, perhaps, yet it is good, solid advice and true. In brief it just amounts to this: That the photographer part is, not to touch the sitter's hand, not to talk about hands, but simply induce the sitter's mind to be so occupied that he or she will unconsciously and naturally pose the hands, and you, the operator, have just got to wait and watch for the happy moment.

Here we see the head and hands are in harmony. The sitter's attention is being given to the lace-mending job on hand at the moment—a physical pose was watched and waited for. This illustration is not put forward as a faultless example. On the contrary, it would be easy to point out several shortcomings. But it may serve to illustrate the fundamental principles that a portrait should show something of the *general character* of the person. That the head should be the part to first attract our attention. That the hands should be subordinate to the head. That their pose and occupation should be in harmony with the position and expression of the head. That they should help to balance the composition and aid the general decorative arrangement of the picture.

Large vs. Small Hands. Just one word on the inartistic, unsound, untruthful notion that the chief art of hand photography is to make the hands as small as possible.

The essence of beauty is harmony, proportion, fitness. Obviously, then, a hand, a foot, a waist too small are as inartistic as one too large. The abstract ideal figure for man or woman, of course, is only an ideal; but the nearer the concrete example approaches the ideal the more harmonious are all its parts. A Venus of Milo with a nineteenth century pinched-in waist is too absurd to think of. Similarly the Discobolos with a small hand would be ridiculous. The same hand or head may be too large for one body—too small for another. A too small head is far worse than a head too large. Actual size is nothing. Proportion is everything.

NOTES ON PORTRAITS OF MEN.

BY C. H. HEWITT.

THE enthusiast in portraiture, be he professional or amateur, rarely loses an opportunity of getting an idea either from some exhibition of paintings, a book of engravings, or an odd portrait in a shop window. The fortunate dweller in the metropolis has many chances for this kind of study to the one chance which comes in the way of the provincial worker. Many of us get to London once in two or three years. But, thanks to process work and the enterprise of publishers, there are to-day many records available of our principal picture shows. One of these I have been turning over and studying at odd moments during the past few days. So far the portraits only have had my attention, and particularly the portraits of men. This is not from any lack of gallantry. It is much more difficult to make a good, strong, characteristic portrait of a man than to make an easy, graceful portrait of a lady. And so, in mentally attacking an ever recurring problem, one natu-

rally turns to the men's portraits for suggestion.

I have made rough outline sketches of five of the portraits. One is at once struck with the number of pictures in which uniform, official robes, or academic gown are worn, and it is not difficult to see how great a help these are in making the picture. Difficulties there may, of course, be in connection with the color schemes; but for the moment we are concerned only with line and light and shade. In sketch No. 1, the lord mayor's portrait, by A. S. Cope, A.R.A., we see how the robes have enabled the painter to avoid the long, straight-up-and-downness which is so awkward in full-length portraits. The hand placed on the hip not only gives width to the figure by holding off the robe, but it also shows the dress beneath the robe, and prevents the awkward appearance similar to cyclists' knickerbockers under an overcoat. The endeavor to give the width to the figure is skilfully carried still further by the chair on the left. Another point strikes one with reference to this position

Fig. 1.

of the right arm. In an historical painting, such as one presumes a portrait of the lord mayor for the coronation year may become, it is well to have the details of dress accurately and closely rendered. The detail is carefully given here, but without producing any effect of spottiness. The art conceals the art, and one has to think to find the reason for this. It is, perhaps, that the bright parts of the robes are drawn more or less to the side, leaving the centre of the picture a large mass of dark. Close beside this mass of dark is another of light—the paper under the mace. This light prevents any effect of spottiness in other parts of the picture. In Fig. 2,

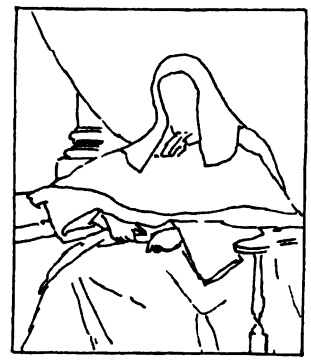


Fig. 2.

Seymour Lucas' portrait of Mr. Justice Swinfen-Eady, the hands appear as characteristic as the face. The firm grasp they have of—is it a paper, or part of the robe? —is worth noticing. I always like to include hands in a picture if they show any character worth recording. I have often noticed how much better an expression may be secured where the head is on one side, as turned to the camera. But, unfortunately, one's sitters so often say, "I don't like that—the head isn't straight." There are a few people, of course, who have observed that the head is almost invariably so turned, and that, in fact, it is quite the easiest way of turning it, which accounts for the easier and pleasanter expression—the movement is natural and the head comfortable when brought to rest. The little glimpse of Westminster seen past the pillar and curtain introduces a light in just the right place to somewhat break the strength of the horizontal line the ermine edge of the robe makes right across the picture.

Sketch No. 3 is of Sir G. Reid's portrait of Professor G. D. Liveing, F.R.S., hung at the New Gallery. The light is concentrated on the central part of the painting—head, coat, hands, and book.

The gown is of great service in preventing awkward lines, and in giving strong masses of shade to parts of the picture where detail is not required, and where, indeed, it could only be detrimental. I am often inclined to wonder why men who wear overcoats with capes do not keep them on when sitting for their portraits. Carefully treated portraits so taken might be given an appearance of distinction. In this portrait, again, the hands are carefully arranged, and their individuality is apparent. I am struck by the fact that this picture is arranged in one plane, almost as if for photographing. In fact, with a lens of reasonable focal length the hand and forearm on the back of the chair should not be out of proportion to the rest of the portrait.

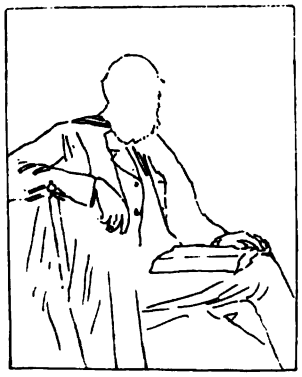


Fig. 3.

Looking at these portraits, one recalls the observation sometimes made, that there should be sufficient head-room to allow for the figure to stand up in all sitting pictures. This is not the case in any of the sitting portraits I have given outlines of, and I do not think they suffer on this account. It is, perhaps, as well to keep the figure low down on the print when trimming such a photograph. In most painters' portraits there is rather more of the lower part of the leg than a photographer generally includes. Possibly this, in a painter's hands, improves the "lines" of a portrait. Fig. 5, for instance, a portrait of Sir R. Douglas Powell, shows almost the whole figure, and is, I think, more dignified than it would be if trimmed off just below and to the right of the hands.

It is interesting to know how the artists fill up the backgrounds. In Fig. 5 a picture is hanging on the wall, while a similar corner in Fig. 4 is filled up with a vase of

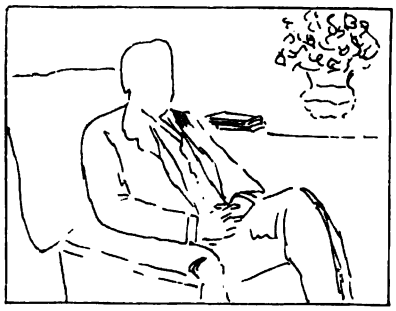


Fig. 4

roses. Fig. 4, a portrait by Sir L. Alma-Tadema, is a capital lesson for a photographer. The sitter is in ordinary, everyday dress, but not a new suit. The coat has lost its original straightness, and has taken on part of the individuality of the wearer. Why do so many of our sitters prink themselves up before coming to the studio? Then the pose is comfortable, and, in consequence, the sitter appears easy and at home. The chair is a luxurious one. I know that there are objections to photographing sitters in a low chair; but this one is not very low, and such a chair would make a pleasing change after the many forms of carved, wooden, and

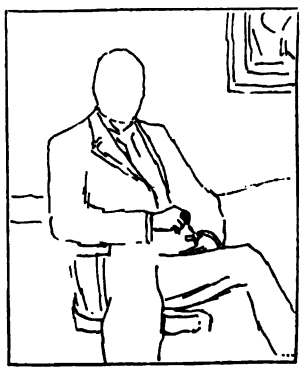


Fig. 5.

partially upholstered seats. Even the cushion at the back increases the effect of comfort. Were this a photograph with someone's name on the mount I could imagine the

sitter's friends saying, "If I can be photographed as comfortably as that I shall go to Mr. ——'s." Referring again to the vase of roses on the table, it is curious how little flowers and foliage are used in photographs of men. When they are, the effect is seldom good. I remember a photographer of ability showing me a negative of a man in which either a plant or some flowers—I forget which—appeared, and remarking that the sitter only needed a fan in his hand to complete the thing!

There is no reason why such a portrait as this should not be produced in any ordinary room, if of fair size. The lighting is simple and direct, and the accessories are few and ready to hand. The chair and cushion should not be too light, and care must be taken that no light objects appear in the background. It would, I believe, be an excellent exercise to endeavor to imitate this portrait as closely as possible—simply, of course, for purposes of study. A print could then be compared with the half-tone block in one of the illustrated reviews of the R. A., and its faults noted, afterward making a second and even a third attempt. Such a course would, I believe, be more helpful to an earnest worker than production of scores of heads taken in imitation of third-rate commercial portraits.—*Amateur Photographer.*

OUR PICTURES.

We are sure that our readers will share the pleasure we have in the examples of portraiture by Mr. C. Durand Chapman, of Newark, N. J., illustrating our current issue. They exhibit a mastery of technique and an understanding of pictorial principles, with a large amount of common sense—a combination not always found even in the work of our best studios. Mr. Chapman is decidedly individualistic in his work, but he does not believe in subordinating the desire of his subject to the expression of his own personality. One feels confident, in looking over his work, that the pictures were thoroughly satisfactory as portraits of his patrons as well as pleasing pictures. This is vitally important in professional portraiture, as many "picture makers" have found to their cost! It is all very well to indulge one's self in one's work, but the wise photographer will think twice before he emphasizes the pictorial side of his customer in preference to the customer's natural desire for a good likeness.

Mr. Chapman is an enthusiast in portraiture and fortunate in a familiar knowledge of pictorial composition. He has already made for himself an envious reputation in his locality, and seems destined to win a wider and greater success as his work becomes known. In the collection of prints sent for our selection examples of "every-day work" and "picture portraits" were included. Mr. Chapman wrote that doubtless we could separate the different classes at a glance. We confess our inability to perceive the difference mentioned. All the prints were equally desirable. Our selection therefore turned to a representative collection, showing the artist's ability with different subjects. We offer them as an inspiration and encouragement to all progressive portraitists. It should be mentioned that Mr. Chapman provides each print with its own appropriate setting, and the mounts differ according to the picture in size, tint, texture, and material. This we could not reproduce, hence the engravings do not completely reproduce the quality and charm of the originals.

Silver stains occasionally get onto negatives, though not perhaps as frequently as in old days. And nothing can more effectually ruin a negative than a good stain. Stains of old standing, long considered as hopeless of improving, can often be removed by immersing the negative in a fairly strong hypo bath. The iridescence must first be removed by mechanical rubbing down with very fine pumice powder. This rubbing down seems to be the secret of success. The iridescent film repels the hypo solution as though it had been a film of grease

APPLICATIONS OF ACETONE SULPHITE.

BY T. THORNE BAKER.

THOSE who buy their sulphite—*i. e.*, their sodium sulphite, in fairly large quantities, will probably have noticed on the label the words, "This article spoils on exposure to the air," or something similar. If the cork be left out of the bottle, as it sometimes is, or if the solution be made up and kept for any length of time, the essence of the chemical is lost, and the crystals are useless in the first case—the solution has to be thrown away in the second. The reason for this is simple.

On exposure to air—even the air inside the bottle—all or part of the sodium sulphite becomes converted into sodium sulphate. For example, a large crystal will soon be covered with a flowery white powder—in chemical language, efflorescence takes place. When a solution is kept well stoppered in a bottle, part of the sulphite becomes transformed or oxidized into sulphate, just as sulphur*ous* acid will become sulphur*ic* on being kept. Sulphates cannot be used in development, as they oxidize the developing agent, while the reason for using sulphite is to prevent oxidation. Hence, it is possible to defeat our own ends by using sodium sulphite in an impure state, and in consequence it is a general maxim that an amidol and sulphite developer must be made up just before use, and will not keep more than three days at the longest.

The advantages of acetone sulphite in this respect cannot be overlooked, especially as it can be used in every instance where it is customary to employ sodium sulphite. By giving a few outlines of the applications we have made with it, the reader will perhaps be helped in some measure when he comes to use it.

Although it can be obtained or made up in the form of a concentrated solution, there is no doubt that it is handiest in the powder form, as no allowance has then to be made for bulk when making up formulæ with any accuracy. As a substitute for the sodium salt in developing solutions, between one and two parts are necessary for every ten parts of sodium sulphite or for every one part of metabisulphite. The following formula for a metol-hydroquinone solution, given recently by Naudet in the *Bulletin de la Photo Club de Paris*, shows some adequate idea of proportion:

Metol	5 grains.
Acetone Sulphite	60 "
Hydroquinone	30 "
Boiled Water	1 ounce.

For use take one part of the above, four parts of water, and add a saturated solution of potassium carbonate drop by drop during the development, as required. The following comparative formulæ will further illustrate this: To five ounces of water add—

A.

Sodium Sulphite	150 grains.
Sodium Carbonate	150 "
Potassium Bromide (10 per cent. solution)	10 drops.

B.

Acetone Sulphite	15 grains.
Sodium Carbonate	150 "
Potassium Bromide (10 per cent.)	7 to 10 drops.

B will be found to keep much better than A, both with and without the developing agent, which in this case is edinol, 15 grains.

It may be noted that in the case of amidol, acetone sulphite cannot be completely put in the place of the sodium compound; but when a small quantity is present it preserves the solution to a great extent, and also effects a slight restraining action.

One of the great differences between modern developers and the time-worn ferrous oxalate is that, while the former must be alkaline, the latter is always used in an acid condition. A slightly acid preparatory bath is frequently employed as well as the necessary subsequent clearing bath. For this purpose, Suss recommends in the *Allgemeine Photographen Zeitung* a 1 per cent. solution of acetone sulphite, which greatly accelerates development. The same solution, or probably one a little stronger—say 3 per cent.—makes an excellent clearing bath for use after development.

A clearing bath is always necessary after developing either plates or papers with the popular metol-hydroquinone or "M. Q." solution, as a white sediment is deposited upon the film. The clearing bath is generally nowadays mixed with the hypo bath

—that is, an "acid-fixing solution" is employed. Such a solution may be prepared in a variety of ways.

For example, an acid may be added to the usual hypo solution. This at once produces both sulphur (as a white milkiness or sediment) and sulphuretted hydrogen—a gas that is unpleasant and deleterious at the same time. Sulphurous acid added to a solution of hypo gives the best bath that can be obtained by direct addition; the admixture with the fixing solution of a sodium sulphite and sulphuric acid, previously filtered, is perhaps the method most generally adopted, and this not infrequently gives rise to yellow staining of gaslight and bromide prints. All these disadvantages are obviated by mixing a very small quantity of acetone sulphite with the ordinary 20 or 25 per cent. hypo bath.

It is my own practice to throw a little dry acetone sulphite into the fixing bath just before use; the fixing bath will then be found to keep clear and colorless for several days, and fixation is not retarded in the way resulting from admixture of sulphurous acid. The acetone sulphite removes sediment from the plates, and gives pure whites on both plates and paper. Its great convenience here lies in the fact that the quantity thrown in the bath does not matter at all, and I think that many amateur photographers, as well as scientific ones, can appreciate a haphazard operation which never goes wrong!

Negatives bleached in the mercury bath for intensification may be reblackened by various means. Ten per cent. solutions of ammonia or sodium sulphite have in later days replaced the earlier method of redevelopment. A good method of intensification, given in the *Bulletin* of the Paris Photo Club, in which acetone sulphite has been used for blackening with considerable success, is as follows:

Bleach the thoroughly washed negative in a solution of

Water	4 ounces.
Mercuric Chloride . . .	30 grains.
Potassium Bromide . . .	75 "

When quite white, the plate is well washed for about ten minutes, and then reblackened in a 2 per cent. solution of acetone sulphite.—*Photography.*

THE COOKE PORTRAIT LENS.

AMONG modern portrait lenses the Cooke portrait lens holds a very high place. This objective, working at the full aperture of $f4.5$, is a development of the well-known Cooke anastigmat, embodying the simplicity of construction and other advantages possessed by these anastigmats. It is designed for the highest class of portrait work, and the back element is adjustable, giving extremely sharp definition or any desired degree of diffusion at will. This diffusion is uniform all over the plate, and the feature is one which pictorial workers will readily appreciate. The definition given by the Cooke portrait lens at the margins of the plate is equal to that given at the centre, and is free from that streakiness of marginal definition peculiar to the image given by other lenses of this class. On this account the lens need not be stopped down to secure sharpness, the diaphragm being used to control depth only. The construction of a portrait lens of this class to work at so large an aperture is necessarily expensive, but the difference in results over those obtained with the older forms of portrait lenses more than compensates for the extra cost. The Cooke portrait lens is introduced in America by

Taylor, Taylor & Hobson, Limited, St. James Building, New York, and their illustrated booklet gives full particulars of the sizes and prices of those at present obtainable.

FORMOSULPHITE—A NEW SUBSTITUTE FOR THE ALKALIES IN DEVELOPMENT.

In 1896 MM. Lumière and Seyewetz, says the *British Journal*, pointed out the possibility of using the aldehydes and ketones in the presence of sodium sulphite, as substitutes for the alkalies in developing, and only the acetone-pyro and hydroquinone-formalin developers have beeen practically adopted, and these to a somewhat limited extent. Most of the other aldehydes and ketones have certain disadvantages which have precluded their general use; for instance, both acetone and formaline are extremely volatile, and the latter unless Schering's formaldehyde be used is very likely to be contaminated with impurities, and this particular preparation is dear, though unless large quantities are used this need hardly be taken into consideration. To get over these difficulties the above investigators now suggest the use of trioxymethylene or para-formaldehyde, which has the chemical formula $(CH_2O)_3$, and is a polymeric compound of formaldehyde CH_2O. Para-formaldehyde is a white crystalline powder, slightly soluble in water, and at ordinary temperatures gives off formalin, and is frequently used because of this property in medical and surgical practice; though slightly soluble in water, it is far more soluble in solution of sodium sulphite, and it is to a mixture of 3 parts of para-formaldehyde and 100 parts of anhydrous sodium sulphite that MM. Lumière and Seyewetz have given the name of formosulphite. The theoretical explanation of the use of this compound is, for instance, in the case of para-phenylendiamine, that the first traces of hydrobromic acid liberated in development are absorbed with the formation of hydrobromate of para-phenylendiamine, and this is in turn decomposed by the sulphite of soda and the reducing agent again set free, and sodium bisulphite is formed, and this is absorbed by trioxymethylene with the formation of a bisulphite compound of the formula $3HCHO+3NaHSO_3$, or $3HCHO+2NaHSO_3$; on the basis of this explanation very small quantities of formosulphite are required, in fact only one-hundredth of the normal quantity of alkaline carbonate. Two typical formulæ with this new agent are:

Pyrogallol	1 part
Formosulphite	9 parts
Water	100 "

And

Metol	0.5 part
Hydroquinone	1 "
Formosulphite	8 parts
Water	100 "

One of the advantages of this new compound is that it hardens the gelatine, and thus would be of use in hot countries.

Having regard to the hardening action on gelatine, MM. Lumière and Seyewetz also tried the new compound in the combined toning and fixing bath, in place of alum, and found that it was advantageous to use equal weights of trioxymethylene and a mixture of 10 parts of sodium sulphite and 40 parts of salt, and of the complete mixture only 0.3 per cent. was required in the combined bath, and that 3 parts of the salt formosulphite produced the same effect as 20 to 30 parts of alum. One of the great advantages of the mixture is obviously that, being alkaline, it produces no decomposition of the hypo, and there is, therefore, considerably less chance of sulphuration of prints, and the toning baths do not require boiling, as is the case when alum is used.

Dealing with the new product the editor of *Photography* adds the subjoined note:

The use of formosulphite, as the "accelerator" in development, is causing some comment and discussion. Paraformaldehyde is non-volatile and solid, unlike its brother compound formaldehyde; it is soluble in sodium sulphite solution, giving the so-called "formosulphite," which, we take it, will sooner or later be placed upon the market. Some of the later experiments carried out were to determine to what extent para-formaldehyde dissolves in solutions of sulphite of various strengths, and to what extent mixtures of different proportions of sulphite and paraformaldehyde are soluble in plain water. The results are rather curious—in fact, just as

apparently inconsistent as are so many things that take place in chemistry. Thus one ounce of a 5 per cent. sulphite solution will dissolve a hundred and six grains of paraformaldehyde, while the same quantity of a 20 per cent. sulphite solution dissolves a hundred and ten—a difference of about 3 per cent. in solubility for 15 per cent. concentration of the sulphite. Again, an ounce of a 25 per cent. sulphite solution dissolves a hundred and thirty grains of paraformaldehyde, so that in this instance a difference of 2 per cent. in solubility occurs for 5 per cent. concentration of sulphite. The experiments show, however, that in order to dissolve the greatest quantity in the sodium sulphite solution, the latter should be 20 to 25 per cent.; a higher percentage makes no difference.

DEVELOPMENT PRINTING PAPERS.*

WHAT do we mean by development printing papers? Properly speaking, all printing papers which give the picture image by development after exposure to light (as distinct from those which yield a visible printed-out image by exposure alone) are development papers. In this broad sense, carbon, platinum, ordinary rapid bromide paper and certain papers prepared with the light-sensitive salts of silver and iron are development papers. But we are not concerned with these at present. The scope of this monograph includes only the development papers (of which Velox is a prominent example), the distinctive feature of which is that they can safely be manipulated in weak daylight or gaslight, no "dark-room" or ruby light being necessary in their use.

Because of this peculiarity such papers are commonly called "gaslight" papers. But they are just as truly daylight, electric light, and lamplight papers. Hence the difficulty in finding a properly descriptive title for this monograph. If it could have been headed "Velox Papers" its significance would have been plain even to the novice in photography. Its purpose, however, is not to advertise Velox, but to serve as a handbook to all the papers of this class, of which Velox was the pioneer and among which it holds (and justly holds) the chief place to-day. Further, since the advent of "gaslight" papers has drawn attention to printing by development as a method peculiarly suited to the photographic requirements of to-day and to-morrow the broader title seemed to indicate more correctly the scope and intention of the work proposed.

The origin of development papers, as we now know them, dates back less than ten years. In 1894, the American photographer, having practically abandoned the use of albumen paper, was experimenting with a host of collodion and gelatine-chloride papers. These called for scrupulous care in manipulation, and the results, apart from their uncertainty, were not always satisfactory. The spirit of unrest was abroad. Every week brought forth a new printing paper, and every new paper claimed to be perfection. The photographer found disadvantages in all, but there was a general determination not to "go back to old albumen," with its slavery to conditions of weather and tedious manipulation. Among the new papers of this year came one called *Velox* (a Latin word, meaning swift, quick), which claimed to be "500 times quicker than albumen," independent of daylight and weather, and giving prints equal to the best made on albumen paper. This Velox came from the Nepera Chemical Company, of Nepera Park, N. Y., and was, I believe, the invention of the company's chemist, Dr. Leo Baekeland.

The first Velox paper was very similar to the glossy bromide paper of to-day, coated on baryta paper, with a faint pink tint, and it gave prints approximately resembling the familiar purple-brown albumen prints of that time. Its novelty lay in the fact that (unlike bromide paper) it could safely be handled in subdued daylight or weak gaslight before exposure and during development. The photographer could fill

* Extract from The Photo-Miniature, No. 46, January.

his printing frames in the quiet light of his printing or toning-rooms, expose the paper to daylight or to a convenient gas-jet for a few seconds, and develop the print at once, without the difficulties attending the making of prints by ruby lamplight. It was wonderful! The possibilities of the new paper were slowly but surely appreciated; the amateur perceived that with Velox he could make his prints at night (or at his convenience) by his own fireside, with a minimum expenditure of time and labor; modified emulsions for "black tones" on matt paper, and other varieties of surface and finish were introduced. The success of Velox was assured. Within a year or two after its first appearance it was well known to amateurs and professionals all the world over. The manufacturers of similar products were not slow to grasp the commercial possibilities opened up by the use of "gaslight" papers; other varieties began to appear, until to-day we have a dozen development papers from as many different manufacturers.

How are these "gaslight" papers made? Very briefly, they consist of a gelatine chloride of silver emulsion minus the soluble salts present in gelatino-chloride print-out papers, coated on many different kinds of paper. This emulsion, which is slightly modified according to the qualities desired in this or that brand of paper, is much less sensitive to light than the emulsion used in the manufacture of "dry plates," but is capable of giving a developable image when properly exposed to light behind a negative—as to daylight, gaslight, etc. The paper stock used in preparing such papers varies in weight, color, texture and surface finish according to the use for which different varieties are designed. Hence, despite all the broad claims about their being handled in "full gaslight," etc., they should be treated with the same care one would give to a very slow plate, being liable to fog if this detail is neglected. Their preparation is beyond the skill and facilities of the average photographer and need not be dealt with here. Among the commercial varieties the reader will find a wide range of different emulsions and papers, excellent in quality, and meeting every requirement at a reasonable cost.

How do "gaslight" papers compare in manipulation and results with other printing papers? There are those who think that the proper way to describe their favorite printing paper is to decry all other papers and enlarge upon the incontestable superiority of the kind they use. We do not follow this method in *The Photo-Miniature*. All printing papers have their advantages and disadvantages; all require care and intelligence in manipulation; all give results pleasing to different tastes. I have seen prints, from the same negative, on carbon, platinum and Velox papers. The Velox print was quite as desirable as either of the other two, as rich in its gradations and as delicious in the depth of its shadows. But the test proved nothing. The negative was clearly an exception to the general run of negatives and the printer was an enthusiast as skilful in Velox printing as he was enthusiastic. We must be fair. A curious commentary on the test was furnished later, when I had a half-tone reproduction made from the Velox print. A fine screen was used and the block was carefully printed. The prints were quite as desirable as either the original carbon, platinum or Velox prints!

Of course, it may be said, with truth, that carbon printing is messy and tedious, and that platinum paper is expensive and has a shorter range of tones than Velox. Also there may be murmurings of "bichromate disease" and the troubles incidental to the use of mercuric chloride. But nothing can surpass the subtle beauty of a good platinotype or the rare delicacy of a good carbon print; and these qualities amply compensate for minor disadvantages. It is the end that tells. All of which is said without prejudice for or against Velox or development papers. The practical conclusion of the whole matter is that development papers offer a very simple and convenient means of producing beautiful prints, at any time and in any place; a wonderful variety of emulsions suited for different kinds of negatives and purposes, are economical in manipulation and, for a great many uses, all that the heart of man can desire.

What about uniformity and keeping qualities in development papers? As with plates, so with papers; uniformity in quality of product depends upon the manufacturer. I can speak for the uniformity

of Velox papers; with others I simply lack that continued experience necessary for an opinion. It is, however, reasonable to expect a slow emulsion paper to retain its efficiency for a considerable period, knowing, as we do, that plates lose their efficiency more or less quickly according to their sensitiveness or rapidity. There is abundant testimony that Velox papers keep their printing qualities unimpaired for a year or more. The same has been said for Cyko and Vinco. The advantages are obvious; one runs no risk of losing paper when a few sheets from a full package suffice for one printing, and there is no need to think about a fresh supply of paper for each printing. For my own part I keep a generous stock of all varieties of Velox on hand, using from this or that variety according to my needs or as leisure permits, regardless of the age of the paper. If there had been deterioration this method of use would have brought it to my attention.

Are prints made on "gaslight" papers permanent? The question is often asked, but is difficult to answer. In theory, a silver print made by development bears an image of metallic silver and, if properly fixed and washed, should be absolutely permanent. Hence manufacturers are unanimous in claiming permanency for prints made on their papers. But the claim is not justified by facts, for, despite both theory and claim, we have all seen "gaslight" prints fade most abominably.* It is true that the fault can generally be traced to careless manipulation, but that evades the point at issue. The average man says: It is admitted that carbon and platinum prints are permanent (do not change and grow unsightly) when made with ordinary care. Will the same ordinary care give me equally permanent prints with "gaslight" papers? The fairest answer to this, going by facts and experience, is bound to be unsatisfactory. The permanency of any silver print depends largely upon the care and thoroughness given to its making; given absolute care throughout, it should be absolutely permanent; given reasonable care throughout, it will be reasonably permanent. I have Velox prints made five years ago by the manufacturers of the paper and others of my own making; some are terribly faded: others are as fresh and as desirable as when first made. This experience is general. Facts are stubborn things. The permanency of any print produced by chemical processes must always depend upon the man behind the print as well as upon his materials. It is, however, unquestionable that, with a reasonable amount of care in manipulation, prints made on development papers will retain their qualities quite as long as is desirable—say twenty years.

The normal print on development paper closely resembles the familiar platinotype. The tones range from a rich blue-black, velvety jet-black or brown olive-black, through an infinite gradation of grays to the pure white of the baryta base or the tint of the paper support bearing the emulsion. Given a reasonably good negative, the half-tones throughout this range of shades are clear and rich in detail. With the possible exception of carbon, development prints are unequalled in their wonderful range of tone gradation and in their capacity for reproducing minute detail. Unlike many printing papers, the general tone or color of a "gaslight" print depends less upon the character of the negative than upon certain modifications in exposure and development. As a consequence of this, we can, by uniformity in these two details, produce any number of prints from a negative, all absolutely uniform in appearance.

The variety of colors obtainable with "gaslight" papers opens up a wide field for experiment. Thus we can obtain "gaslight" prints in many reds, browns, sepias, greens and blues, apart from the normal blacks and grays. In some cases these colored prints are obtained by variations in exposure, developer or development; in others by "toning" or intensifying methods. We must not forget that these changes belong to the field of experiment and the results are uncertain. The permanency of such prints is equally uncertain, but their production offers interesting possibilities which should not be wholly neglected.

* We may point out that the early Velox prints issued with this and other magazines were usually prepared in large quantities and under conditions hardly conducive to permanency.—ED. W. P. M.

THE QUESTION OF BOOKKEEPING.

WHEN I learned photography there was more than enough of guesswork about it. My employer was from England, and as my father was also English they arranged that a premium should be paid for "teaching me the business." One hundred dollars was paid in hard cash, and I was to work for twelve months without pay. No premium and a wage from the start would have been a fairer arrangement, for I learned nothing except what I picked up myself; and I was put to use the very first day, and did good service as messenger-boy and general sweeper-out and window-cleaner. Unfortunately I learned a good deal which was not calculated to do me any good.

The great trouble (apart from the fact that the gallery turned out only the cheapest quality of work) was the unbusiness-like management of everything. We had mounts enough in the place to last five years, but not a single respectable camera. So it was all through the business—overstocked with some things and out of stock of others. There was no system in following up an order or a sitting. Often proofs did not suit, and the matter was not carried any further. If the customer came for a re-sitting, well and good; if not, it was just the same. The biggest mistake of all—the one that led to all the others—was the lack of a system of bookkeeping.

There was just one book—a school-exercise book—in which photographs were entered when they were sent out. Orders were rarely entered—we just remembered them. When the bill was paid a big "Paid" was scribbled over the entry. Often at the end of the week we would think that some change had been forgotten, and would spend half an hour in trying to remember. There were accounts three or four years old way back in the pages of old books, which were filled, and we found it hard work to wade through the pages to find them. I know that for one reason or another many of them were never paid.

There was no record of any orders. We remembered what our customers wanted, and with orders given for materials the bills were paid when they came in, and we trusted to luck that they were right. All the supplies came from one firm, and—I did not know it at the time—that firm really owned the business, for it had been mortgaged against an account which had run too long. They did not want the business, but it gave them the trade.

Before I started for myself I worked for three other men, and not one of them understood bookkeeping; so in case there are any photographers who are business-like enough to get WILSON'S MAGAZINE, and yet unbusiness-like enough to neglect bookkeeping, I give my plan just because it is a simple one, which can be easily explained and which works well.

When I came to feel the need of keeping books I spent three dollars on an instruction-book, but after sitting up nights with it for a week I could not make sense of it; then I spent ten dollars, which took considerable earning, on a correspondence course; but they seemed to think I wanted to qualify for head cashier in a bank. At last, one lucky day I talked it over with a man who ran a shoe-store, and he put me right. "It's not a question of system," he said, "nor of ruling lines in red ink; it's a matter of hog-sense." And, better than telling me that, he showed me just how to go about it.

The one great rule that he drilled into me was never to let anything go out without making a note of it *at the time*. If I am rushed, and think I will enter some photographs in the evening, I may do so—or I may forget. If I take just one minute to enter them when they are sent out, then the matter is safe. I have a good memory, but he would not hear a word about memory. Always put it down in black and white *at the time*. For the rest the whole thing is so simple that it seems absurd that it should ever have troubled me.

At the time of sitting, the customer's name and address, if necessary, are entered in an order-book, which is just a large book of ruled paper; then the order is written down with particulars, or a space is left for particulars when the proofs are returned. The pages of this book are ten inches deep by eight broad, and I never enter more than two orders on a page. If

an order takes more room than usual, it has a page to itself. This just prevents me crowding the book, and makes it easier to refer to. When the order is complete it is compared with the order-book to see if it is all right, and then it is entered in the day-book, which is a book ruled with cash lines. The charge is entered like this:

Feb. 10.	Mrs. Smith, 525 Ave. E.	
	1 dozen cabinets	$3.50
	½ dozen midgets, special art mounts,	1.00
		$4.50

When this is entered in the day-book I draw a great black line right through the entry in the order-book to show it is finished. If Mrs. Smith only gets a part of the prints she has ordered, I make a new entry in the order-book for those yet to be delivered and rule out the old order. By drawing a black line right down the middle of the order I can see at a glance, by rapidly turning over the pages of the book, if anything has been missed. I usually send the invoice by mail the day after the pictures are sent; then if Mrs. Smith is a regular customer she has a half or quarter page in the ledger, where I enter the amount.

Feb. 10.	Portraits (43) . .	$4.50

The pages of the day-book are numbered, and I copy the number of the page into the ledger, placing it just before the amount so that I can turn it right up if ever I want particulars of the account. When Mrs. Smith pays I enter in the day-book—

March 12.	Mrs. Smith. Cash,	$4.50

and then this is copied into the ledger opposite the other entry to show the account is square.

When I give an order to a dealer I write it down in a book, making two copies, one for the dealer and one for myself. When the stuff comes I check it against the order and then check the invoice. If the invoice is right I copy it into the day-book, and then put it away in a file. From the day-book the amount is copied into the ledger; in fact, the system is just the same as when I deliver prints. Everything that I receive, whether material or cash, goes down in the right-hand column of the ledger; everything that I send out, whether portraits or cash, goes down in the left-hand column—that is, the amount does.

Most of my business is fairly prompt cash; but at the end of every three months I go through my ledger and send out a bill for everything over a month old. I do not send a blind statement, but specify what the goods are—that is, I send a copy of the invoice. I find that it is good business to get these accounts out. They remind people and fetch in the cash.

I have a cash-book which I use at the rate of two pages—one opening—a week. On one side I put down every cent spent; on the other side I put down every cent received. At the end of the week I add both sides up, see how I stand, and copy the totals into a page at the end of the ledger. One very important tip the shoe man gave me: "Never go 'to the till' for spending money." Whatever money I take for living is honestly entered, and every week I find out exactly how much I have spent on myself—I mean all living expenses, whether rent or grocery bill, or a new dress for my wife.

Since I started this simple system of bookkeeping I am sure I have saved money. A couple of years ago I got an invoice for two cases of plates which I never received. At the old studio they would have been paid for, for there we trusted to luck; but I knew they had not come and would not pay, though the house swore they had sent them and would make me. After a time they fixed the loss on the express company.

In vignetting bromide prints the usual mistake is in getting the edge too hard. They are usually made by artificial light; and the light fairly close to the negative. To insure the proper softness the vignette should be further from the negative than is the case when printing by daylight, and the opening should be covered by tissue paper.

The Chinese long ago discovered that one side of a pretty face was prettier than the other. How many photographers have discovered this with a homely face? But so it is. By a judicious choice of viewpoint—full face, profile, or three-quarter—and a careful arrangement of the light, the homeliness of a face may be much modified.

IMPROVING NEGATIVES BY REPRODUCTION.*

BY S. HUDSON CHAPMAN.

THE usual process of intensification of negatives by bichloride of mercury or their reduction by persulphate of ammonia is hazardous to the originals. The result in either case may be excessive, tending to great harshness or to great flatness, or even the absolute destruction of the negative. And, should an unsatisfactory result be reached, up to the present, the damage is done without repair.

But, by making a positive from the original negative, for instance, in the case of a negative that has been over-exposed and is consequently too soft, slightly harder than the original, and again making a negative from that which will admit of any degree of contrast we may desire, we can obtain any result. And, if unsatisfactory, the original negative is uninjured. The operation may be commenced anew and a result in either direction obtained, and the original still be fit for use in its first state.

When a negative is too hard, by giving a long exposure and using a weak developer, a softened positive may be obtained from which a negative of the proper density can now be made.

This means of obtaining a negative to suit our desires has been used, but in some isolated instances, and I do not know of its having been urged for general use. But this is one of the principal objects in my paper on this subject, to advise the discarding of the use of the common reducers and intensifiers for all valuable negatives—for negatives that cannot be re-taken. I hold that the common means should be used only for negatives for present and immediate use for purely mechanical subjects.

In my experience I have found that all negatives intensified by professional photographers or by myself have in three or four years become clogged and destroyed for printing by the solution used.

A few years ago cyanide of silver was advised as the most permanent agent for reducing the image from bichloride of mercury, but I find these negatives have gone back equally badly with the other processes.

Having some very valuable negatives which had been destroyed in this manner, I desired to remove the intensification, and, having had a long experience in the use of a weak solution of cyanide of potassium in removal of tarnishes from silver coins, I observed it would remove the lighter deposits of the gases caused by the atmosphere, but had no effect on the black oxides and sulphides of silver. And I, therefore, reasoned that it would have no effect on the actual silver image in the negative, and tried it upon one of the cyanide of silver intensifications and found that I could absolutely remove the intensification without apparent injury to the negative. I show you the negative so treated.

This, so far as I can find, has not been accomplished before, as, on consultation with two senior members and photographic chemists, both said they knew no means of removing the intensifications.

I next essayed to remove deep stains on negatives by the same solution, and I found that the cyanide will remove all stains in negatives, the deepest crimson produced by prolonged development with pyro or the bright yellow stain of eikonogen hydrokinon or metol hydrokinon without diminution or injury to the original image.

Iridescent deposits of silver on the surface may also be removed. I have learned subsequently that cyanide of silver solution was used for the fixing and subsequent removal of tarnish of daguerreotypes, and that it has been recommended for the removal of iridescent silver stains, but it has not been recently mentioned or brought before the photographic world in this country.

I think that this places a great power in our hands for the recovery of negatives from stains and from faulty intensification. I exhibit to you reproduced negatives and prints showing the various stages of reproduction which I have mentioned and the removal of stains and faulty intensification.

In closing I would give one caution in

* Read before the Philadelphia Photographic Society, February 11th.

regard to the use of cyanide of potassium solution. Absolutely pure water must be used and it would be better to have some distilled water in two trays, the first for rinse and the second for the first washing of the negative, after which it should be submitted to subsequent washing for the entire elimination of the cyanide of potassium solution.

The formula used for the cyanide solution is forty grains of cyanide of potassium C. P. to four ounces of distilled water.

PHOTOGRAPHS UPON WATCH CAPS, LIDS, AND DIALS, IN SILVER AND CARBON.

Practical Instructions with Working Formulæ.

BY A. J. JARMAN.

CONSIDERABLE interest attaches at present to the production of photographs on watch-cases and dials. This work is almost exclusively done by firms making a specialty of these processes, the photographer rarely attempting to do the work for himself. It is a profitable specialty, and by following these articles the readers of WILSON'S may undertake such work, and so save the profit at present going to others.

In the production of these photographs, it does not matter whether the watch-case or other article is gold-plated or silver-plated, so long as the metal beneath is sufficiently covered with a film of silver or gold. Nickel-plated watch-cases or fancy articles should not be attempted, for reasons which will be explained later. The instructions here given will also cover the making of miniature portraits on watch dials, which work does not present any considerable difficulty. We will first deal with this process.

The negatives required for watch-dial portraits should preferably be of that quality best suited for carbon printing, except that the negative need not be a reversed negative, since the image is developed direct upon the cap or lid or dial. To make the photograph by the silver process we proceed as follows: Procure some baryta-coated paper; the color of the baryta coating is immaterial. Cut the paper up into pieces about eight inches by ten, or ten inches by twelve. Place these in a clean printing frame with a side piece of glass and keep them under pressure for twelve hours or more. This will take out any curl there may be in the paper without injuring the delicate surface.

Now prepare the following solution:

Heinrich's soft gelatine (or Nelson's No. 1)	130 grains.
White granulated sugar . .	30 "
Filtered water	10 ounces.

These are placed in a thoroughly clean pitcher or small stoneware jar, and allowed to soak for an hour. Place the pitcher with its contents in a suitably-sized saucepan, pour some hot water into the saucepan around the jar about one and a half inches high; bring the water to boiling point and keep it at this temperature for about five minutes, during which time the contents of the pitcher should be stirred with a glass rod or with a strip of clean glass until the ingredients are completely dissolved and a thorough mixture obtained. Have ready at hand a porcelain pan or tray of suitable size; allow this to rest in a larger tray containing hot water (the object of this being to keep the inner tray at a uniform temperature, thus preventing the gelatine solution from becoming too thick or setting to a jelly, this point being important as influencing the coating of the paper). Now take a piece of cheese-cloth about eighteen inches square, rinse it thoroughly in warm water, wring it out as dry as possible and place this over the top of a clean basin so as to form a bag in the middle. Pour the hot gelatine solution through this cheese-cloth. This being done, pour the filtered solution directly into the warm porcelain pan or inner tray, so as to avoid forming air-bubbles.

Take one of the pieces of baryta paper by the extreme corners and bring the ends up so that the sheet is shaped like the letter U. Allow the centre of the sheet to

touch the gelatine solution evenly at every point, then carefully but quickly lower each end (as in silvering paper), so that the sheet lies flat upon the surface of the warm gelatine. If there is any tendency to curl, hold the ends down on the solution for a few seconds, when the paper will become quite flat. Now remove the sheet by drawing up one corner and carefully allow the solution to drain from it against the edge of the tray. This should be done carefully so that no air-bubbles are formed. Hang the paper up to dry in a room or closet free from dust, by means of wooden clips, using a length of copper wire as a support. This wire should be stretched from each side of the room or closet. Do not use string for this purpose, as the loose fibre may fall and stick to the gelatine side of the paper. Great care and cleanliness are essential in all the coating operations. It is advisable to coat a number of sheets of the baryta at one time when the gelatine solution is in good condition.

This coating of gelatine solution upon the baryta paper forms the substratum upon which the collodion silver emulsion rests, and paper so prepared will keep in good condition for about two years. When thoroughly dry the sheets should be packed together flat in a large printing frame, with two sheets of glass or other perfectly flat support, and kept under pressure until required for use. This not only flattens the paper, but keeps it out of harm's way until required.

A collodion emulsion should now be prepared according to the following directions:

Collodion.

Pyroxylin (gun-cotton) . .	47 grains.
Alcohol (pure photographic) .	3 ounces.
Sulphuric ether	5 "

Shake this mixture well until all the pyroxylin is dissolved, and mark the bottle "Stock Collodion." Now procure half a dozen four-ounce or five-ounce amber-colored glass bottles with good fitting corks, clean them thoroughly, and when dry prepare the following solutions:

No. 1.

Nitrate of silver (C. P.) . .	4 drachms.
Distilled water	4 "

No. 2.

Chloride of strontium . .	128 grains.
Alcohol (pure photographic) .	4 ounces.

No. 3.

Citric acid (powdered) . .	128 grains.
Alcohol (pure photographic) .	4 ounces.

Be sure that all the above solutions are completely dissolved.

In a separate, clean bottle, pour four ounces of the stock collodion, add sixty drops of solution No. 1 to two drachms of alcohol, shake thoroughly and add to the collodion. Shake the mixture well and add two drachms of No. 2; shake vigorously and finally add one drachm No. 3. Now shake the mixture well; allow to stand about half an hour and it will be ready for use.

Take one of the dried gelatinized sheets of paper; fold up the edge about one-quarter of an inch so as to form a tray of the sheet. This is readily accomplished by carefully placing a clean strip of wood, such as a flat rule, upon the flat surface of the paper and turning up a quarter of an inch edge with the fingers. Make this edge so that a lip is formed at the opposite corners of the sheet. Hold the sheet in position on a piece of stout cardboard by just a touch of sealing wax at each corner so that the wax is not exposed. Have at hand another clean amber bottle with a small glass funnel, in the neck of which has been placed lightly a small tuft of absorbent cotton. Filter the collodion emulsion into this bottle. When filtered take the prepared paper tray in the left hand by one corner, pour thereon about one ounce of the emulsion, and gently tilt the tray so that the emulsion is made to flow to the corner nearest the hand that holds it, then to the opposite corner, now to the third corner, and lastly to the fourth corner, where the excess of emulsion is drained from the paper into the first bottle by means of the lip at the corner of the tray.

This operation is exactly like finishing a negative. When the surface of the paper has been well covered with emulsion rock it gently to and fro so as to secure a perfectly even coating on the surface, then stand the paper aside to dry. When quite dry, which will take about ten to fifteen minutes, coat once more with the filtered collodion, but for this coating reverse the position of the tray so that the emulsion is drained from the corner opposite to that

from which it was drained in the first instance. The object of this second coating is to secure an even coating all over the paper. Allow the second coating to dry, and when thoroughly dry lift the coated paper off the supporting cardboard by means of a penknife. Trim the edges off with a pair of scissors. Pack it in a clean printing frame as previously described, so as to protect it from the air until required for use.

This prepared and sensitive paper will keep good for about one week if kept under pressure, and away from light. It should be understood, of course, that all of these operations must be performed in a yellow or orange-colored light, never in a white light, as the emulsion is very sensitive and the pure whites of the resultant picture would suffer. This will be well understood by the older photographers, but may be new to some of the younger workers. All the solutions may be put aside for future use, as they will keep in good working order for about two months.

(*To be continued.*)

SPRING IS HERE.

BY PAUL CLARE.

SPRING, the beginning of the year, is just upon us. According to the calendar, the year has been with us a full three months; but according to the cycle of the seasons, it is but dawning. Hoary winter —not December—is the last sleep of the year; and the beginning is with the warm rains and returning robins, and budding trees. We—that is, the country at large—have been a little out of sorts. We have lived on a good prosperity for several years, and have had a touch of the feeling which sometimes follows too much Thanksgiving dinner. We have shown a little momentary irritation. We have had our coal strike, and we are troubled over many things, from trusts to the color question. What has the future for us?

Whatever may be in store, we at least start with confidence. For the last five years business men have been asking themselves how long prosperity was to last. And every year has borne out the sanguine expectations of the optimists and discomfited those inveterate pessimists who, apparently, *must* predict a slump. The outlook to-day is, for a man with good digestion, as full of hope as ever.

Will that hope be fulfilled? We confidently expect it for the country; how about the individual—how about you and I? Well, for ourselves we can answer the question more easily than we can for the country. Our past record is a fairly safe index to our future condition. Have we shared the prosperity of the last five years; are we sharing it now? It may be that some of us have prospered in spite of ourselves (but that is usually the other fellow rather than one's self); but on the whole, if we have proved successful, we may confidently anticipate that the energy which serves us now will not fail us when times begin to pinch.

How about the man who has not tasted of the prosperity; who has had a hard fight to keep his head above water, while all around him money has been made? It may be that he is the most unfortunate of mortals—whether he is you or I or the other man—and even if not so he will be the last to admit that he is his own fate. But the cause is more easily explained than the consequence endured. He is up against a hard fact, and it is more important to get rid of the fact than to account for it.

How get rid of it? If there is one thing sure in this world, it is that man must work out his own salvation. It is a hard gospel; but the old theories about "royal roads" do not exist now (even if they did in the golden age), and so we must accept the hard fact. Once a man has fallen behind, it most often means that he has formed a habit—and habits are hard things to overcome.

So we face the hard fact—which loses much of its hardness when looked squarely in the face. The future is before us, and it is in our own hands to mar or to make.

A measure of success is within reach—it may not be to make a pile, or even to save money—but at the least there is a step higher. Get out of the old sloth. Spruce up the old gallery—mundane soap and water, and paint, are sometimes more essential than art. Bring the place up to date. Wash the floor and clean the windows. Make the display look more attractive with new pictures and tasteful mounts. Buy Todd's book on *Lighting* and *read* it; buy Raymer's and *read* it. Read your WILSON'S, and any good matter relating to photography, or pictures, that you can lay hands on. Reading is not easy work; it is not quick work. Reading, to be at all helpful to the business, should conduce to much thought—a little reading and more thinking it out. It is not given to every man to judge his own work; some of the best critics—and men who do good work—are honestly in trouble when they try to "size up" their own productions. But everyone can judge of improvement when it is a choice between a clean or a dirty gallery. And with trying, improvement will come in the work also. It will come by slow degrees; it may well be begun in the trimming and mounting of the prints; in avoiding incorrect backgrounds and accessories—such as a painted sea and a boat for a lady in evening dress; or a conservatory for one in skating costume.

There will be only one wrench—the first sudden swerving out of the sleepy groove into wakefulness. Then after the wrench comes the hard work; the dogged sticking to it; the slow evolution to a higher grade. It may not always be easy; but if the heart is in it, it will not prove too hard.

And the alternative is always the hard fact! And sleeping along hard times is even less pleasant than working hard for some improvement. And prosperity may not last forever; and when it breaks, the weakest one will first go to the wall.

PRACTICAL LENS NOTES FOR DEALERS.*

BY EXPERIENTIA.

THE CHOICE OF FOCUS.

THE choice of a lens is a matter which requires some considerable thought and care, especially if one of the modern and more expensive anastigmats is what the prospective purchaser has in view. The question is considerably simplified by the dealer knowing the requirements of his customer, and if these requirements are such that they cannot be realized in one instrument, can convince his customer of the fact. Difficulties, however, are found when a customer is met with whose ideas, both of his requirements and photographic optics, are hazy, and who cannot realize that the fulfilment of his most cherished wishes is a matter of impossibility. Before we can decide upon any type of lens it is necessary to glance at a few preliminary considerations which apply with equal force to all. The first factor in the choice of a lens is the size of plate to be used. Personally I should not advise an amateur, pursuing photography as a hobby, to have a hand camera using a larger plate than four by five; apart from the merely physical objection of weight, there is, as will be seen later, a greater difficulty attendant upon the use of large plates. On the other hand, for stand work—leaving out of question those cameras which are primarily intended for hand work but also adapted for tripod use—I should certainly advise the half-plate as the smallest size for serious work. Having determined upon the plate, a lens having a focus about equal to the diagonal of the plate is usually selected, and this simple rule is one which serves as an excellent guide. For a good deal of work, however, a lens of somewhat shorter focus may be chosen as its depth of focus, a point which I shall be coming to later, will be greater, and the wider angle in architectural or town work may be of advantage. On the other hand, to a pro-

* The second paper of this series, reprinted from the Photographic Dealer and intended to help the dealer answer questions put by buyers of photographic apparatus and material; so many professional photographers now sell supplies that we believe these papers will be useful to our readers.—ED. W. P. M.

fessional photographer, especially one engaged on press work, where it is essential to have the image of the principal object as large as possible, a lens of much longer focus than usual would be advisable.

Placing the telephoto lens aside, it can be said that the size of image is directly proportionate to the focal length of the lens, and therefore the longer the focus of the lens used the larger the size of the image. One can, of course, with a short focus lens approach nearer to the subject, and thus obtain a larger image, but this is done at the danger of exaggerated perspective. Size of image is often of the greatest importance, but, unfortunately, the use of a long focus lens is attended with a difficulty in focusing. Depth of focus, by which I mean the rendering of a number of objects situated at different distances from the lens all perfectly or passably sharp at the same time, is a question upon which a great deal of misunderstanding exists. The professional photographer is usually a gentleman with decided and often very peculiar views upon "depth;" it is a subject worrying him exceedingly, and upon which he is prepared to talk for hours. Depth is no quality of any particular lens; if a dozen different lenses of the same focal length be tested at the same stop, they will, if they are good lenses of their respective kinds, give, so far as depth is concerned, identical results. Should one of the lenses give a soft image under all conditions, then the fact that throughout all the planes of the image diffusion will be found will make the unthinking reject the lens on the ground that in depth it is inferior to the others. So, also, a too hasty judgment may lead one to suppose that a lens having an extremely round field has greater depth than an anastigmat of the same focal length and aperture; for while the latter will, owing to its flatness of field, give objects in some planes only, dependent of course upon their distance from the lens, sharp, the latter will, by reason of its saucer-shaped curvature, give some points of sharpness in a greater number of planes, although not one of these planes may be *throughout its whole* perfectly sharp. A good test—if a test is needed to demonstrate a truism—to show depth of focus, is to place a number of printed cards, say four or six, in parallel rows about six inches distant from one another, each card being a little higher than the one in front. If we set this series of cards a few feet from the camera, we can examine our screen and note the sharpness of the lettering of the different cards. Our test, if it is to be an absolute comparison, must be made with lenses of the same focal lengths and apertures; but this is, of course, not needful if our object is simply to demonstrate how depth is varied by focus and aperture. To be precise our test also should be made by a comparison of *negatives*, for it is difficult to carry in one's mind the images formed at different times upon the screen by a number of different lenses.

Depth of focus falls off considerably as lenses increase in focal length, the comparisons in each case being made with the same apertures; therefore, for hand-camera work the use of a long focus lens is greatly restricted. Long focus lenses are, however, seldom desired by the majority of amateurs with hand cameras, who much more often require a lens of large aperture and consequent greater rapidity. Aperture also determines the depth of focus, and although much may be said by those workers whose enthusiasm has run away with their judgment upon lenses working at F/1 or F/2 for hand work, there is a limit to the rapidity of lenses for practical hand-camera work. With a named lens, such as the Goerz anastigmat of five or six inches focus, working at F/6 or F/7, it will be found preferable, if circumstances permit, to stop it down to F/8 or F/11 for general work. There is no need to stop the lens down for definition, but at F/11 we shall obtain more sharpness with all objects which are situated between the infinity point and the camera; and if we have focused upon an object at a specified distance, not only will those objects before and behind the particular plane upon which we have focused be sharper at the small stop than with the large, but inaccuracies in the judgment of distance will be less noticeable. It is, therefore, not alone on account of weight that a quarter-plate or five by four should be recommended in preference to a half-plate, and a shorter rather than a long focus lens be selected for hand-camera

work, but for the more important reason that the shorter focus lens possesses the most desirable quality of depth of focus, and that this can be combined with a fairly large aperture.

To show how depth decreases with increased focal length and aperture, I reprint the following table which has been issued by a well-known maker for users of his double anastigmats. The table will, of course, apply to all lenses of similar focal lengths:

DISTANCES IN YARDS BEYOND WHICH ALL OBJECTS ARE IN FOCUS.

Focus, inches.	F 4.8 yds.	F 6.3 yds.	F 6.8 yds.	F 8 yds.	F 11 yds.	F 16 yds.	F 22 yds.	F 32 yds.
3½	7	5¾	5	4¼	3 1/11	2⅛	1 6/11	1 1/16
4¾	14	10½	10	8½	6¼	4¼	3⅛	2⅛
6	24	18½	17	14½	10½	7¼	5¼	3¾
7	28	21	20	17	12½	8½	6¼	4¼
8¼	40	30	28	24	18	12	9	6
9½	56	42	40	34	25	17	12½	8½

The single lenses used on so many cheap hand cameras are stopped down considerably, and everything is therefore in focus from seven or eight feet and beyond. I have had to fit to such cameras on many occasions anastigmat lenses working at much larger apertures, and with these lenses the infinity point has been removed to thirty feet, or beyond, according to aperture. It has sometimes required a great deal of argument to convince my customers that this is only what can be expected, and to remove the idea of their old lens being one of "fixed focus," and, therefore, better for hand-camera work. Every lens has, of course, an infinity point, and none can be considered more "fixed focus" than another.

Length of focus determines not only size of image, but angle of view as well. For ordinary work a lens of moderate angle, *i. e.*, a lens having a focus not shorter than the longest side and not longer than the diagonal of the plate should be used. A long focus lens is sometimes desirable for stand work, and this can be obtained in the case of most anastigmats and other symmetrical doublets by the use of the single combinations of the lens, although a much longer extension will be needed. If the camera to which the lens is to be fitted has a double extension, it may be well to select a lens of such a focus that the single combination can be used, as the usefulness of the lens is thereby considerably increased.

Choice of focus is oftentimes limited by the construction of the camera, and rapidity determined by the kind of shutter fitted to the apparatus. It is usually with cheap or moderately-priced hand cameras of the box pattern that this "Hobson's choice" occurs. The front carrying the lens is not infrequently immovable, or its motion is limited to an inch or so; in either case we are practically limited to a lens of one focal length. The shutters supplied with such cameras have usually small openings, and as there is often a difficulty in enlarging these, even if it is at all possible, a lens of moderate rather than large aperture must of necessity be chosen. It would, of course, be preferable to fit to the new lens a new shutter, and thus insure that the rapidity of the former is not reduced by a smaller aperture of the latter.

To my mind this should always be done if the structure of the camera is such that it is possible to conveniently fit and work a new shutter. The cost of the latter is seldom a hinderance to its fitting, for I find if a customer pays $35 or $45 for a lens, he will as willingly pay $45 or $55 and have it fitted with a new shutter, if he can be brought to see the advantages of the latter.

There are other considerations attaching to the choice of a lens—definition and covering power, for example—but I have purposely limited these notes to choice of focus.

(*To be continued.*)

The Photographic Convention of Great Britain will be held at Perth, Scotland, July 6th to 11th, under the presidency of Sir Robert Pullar. The only purely photographic features in the published programme are papers on "Fact and Fashion in Photography" and "Microphotography." Apart from these features, the time of the convention is apparently to be devoted to lantern lectures on "Cairo and the Nile," "A Trip to Egypt, Sinai, and Palestine," cycling, and excursions around and about Perth, which is located in one of the loveliest parts of Scotland.

THE LADY AT THE DESK.

BY F. M. F.

I TRIED to persuade my reception-room lady to describe her work and her methods for the possible benefit of some of the readers of WILSON'S, but she appears to be too shy to do so. It is a little strange, for she is not at all shy in her reception-room, but is very much "all there." I am not often in the room when she receives a customer, but still I think I can describe her method of working.

First of all, she is a model of neatness. When she is writing or busy with the books there is not a scrap of anything on the desk except what is actually being used. When she is spotting some prints, before sending them out there are no books or papers on her desk. This good trait was not learned at the gallery; far from it. It must have been inculcated at an early age.

She is always on hand in the morning a few minutes earlier than need be, and dusts and arranges all the specimens. When customers come she is most polite and attentive. She has the happy tact of understanding the callers and making them feel at home. She does not treat the working woman or the farmer's wife in one fashion and the woman of wealth in another. She is equally considerate and attentive to all. In showing work she always "sizes up" her callers, and can tell whether to show platinotypes at eight dollars or midgets at eighty-five cents. Most purses, at least in this section, have a limit. It is easy to frighten a poor person by showing too high-priced work; on the other hand, if people are shown the cheaper work first they can often be persuaded to take the more expensive—if it is not *too* expensive. It is right here that the advantage of small specialties counts. A person may not be able to spring a couple of dollars in order to have platinum prints, but will go fifty or seventy-five cents for some special mounts, which give something to show for the money and are good value, but which leave a good margin of profit. Vignettes, before they played out, were a good line of this kind.

When a customer is passed forward to the gallery she, or he, is brought in by the reception lady and the order explained. The order is almost invariably obtained before the sitter comes under the skylight. Very often—always if it is a stranger—the cash has been collected. These items are so vital that it is a wonder that any photographer ever neglects them, and yet I have known men who will give credit to any one and who submit three or four proofs before having booked a definite order.

She knows, better than some photographers, that it is only the cash from orders which counts; and so, while she knows most of the people in town, and can chat with them about personal or church affairs, she always watches the business side, and does not let people "guess they will look in again." She clinches the order and arranges for the sitting there and then.

It is a cardinal rule in the gallery never to disappoint a customer. People are mostly in a hurry to see their pictures, and we get the proofs to them as soon as we can. If there is any kick the reception-room lady discusses it with the customer. It may be that the matter can be explained and the customer made satisfied; perhaps, however, there is legitimate reason for the complaint, in which case a re-sitting is a matter of course. But where there appears no reasonable cause for complaint, and yet the customer continues to feel dissatisfied, the reception lady usually grants the resitting. We consider it as all in the day's work, reckoning the cost only of the extra plates and paper used. It is very easy for a customer to feel, in all honesty, that the portrait is not quite right, even when we cannot see the fault in it, and it is pleasanter and better business to please the customer with a re-sitting than to lose them by refusing it.

I believe that a good, tactful girl in the reception-room influences a lot of business. Many a daughter occupies the position in her father's gallery. If only she knows it, she may be a very considerable factor in either helping or hindering the business.

EDITOR'S TABLE.

The Meaning of Pictures.—By PROF. JOHN C. VAN DYKE, of Rutgers College, New Brunswick, N. J. 12mo., 161 pages, 31 illustrations. Price, $1.25. New York: Chas. Scribner's Sons, publishers.

Those who have been familiar with Prof. VAN DYKE'S other works on art will hail the appearance of his *new* one with pleasure. It consists of six lectures given for the Columbia University at the Metropolitan Museum of Art, and the full-page illustrations comprise a choice selection from the works of the Old Masters. Prof. VAN DYKE is one of our most entertaining and instructive teachers in this line. In the present case, while he agrees that there are many ways of getting at the "meaning" of a picture, he concludes and generally teaches, evidently, that the fairest and the best way for instruction is to estimate the picture of any artist from the light in which it is viewed by the painter himself. "Art is capable of being estimated in different ways," the author declares in his preface, to which remark he adds: "I have endeavored to set forth the various points of view" in all cases. The six lectures are entitled as follows: 1. Truth in Painting. 2. Individuality, or the Personal Element. 3. Imagination of the Artist. 4. Pictorial Poetry. 5. The Decorative Quality. 6. Subject in Painting. The third appears to us to be the one most helpful in the work of the photographer, but we would recommend that the entire work be studied by all who make pictures with the camera. "In the ordinary acceptation of the word the imagination is little more than the image-making power—the ability to see a thing in the mind's eye. We all have the power in some degree." . . . What the portraitist really "does," claims Prof. VAN DYKE, "is to look over his sitter with an eye to his exterior appearance." The photographer should practice this, and his results will be "his conception, his idea—yes, his ideal"—and should ever be *his best.*

The Figures, Facts, and Formulæ of Photography, and Guide to Their Practical Use. Edited by H. SNOWDEN WARD. Published for THE PHOTOGRAM, Ltd., by DAWBARN & WARD, Ltd., London.

When *The Photogram* was founded, some ten years ago, the editorial staff of that always interesting magazine put on the mantles of all the prophets and announced its intention to be a sort of universal provider in photography—the centre of an international system of mutual help and co-operation. How well *The Photogram* has fulfilled its self-imposed task is demonstrated in a score of useful volumes full of practical information (albeit abominably indexed), such as *Trade Names, List of Dark Rooms, The Index of Standard Photograms,* etc. The latest addition to the series announced above is a handy cyclopædia of receipts, covering the theory and practice of some thirty-three branches of photographic manipulation from fireproofing accessories to nasal catarrh. Its directness, fulness, brevity, and interest are its virtues. We lament the fact that it is not international, being compiled for the English worker, and, therefore, bristling with British formulæ—"methylated spirits," "papier mineral," and other trade names unknown to American workers and dealers in chemical sundries. Despite this defect, the three F.'s are well worth the price, and we would not begrudge five dollars for the volume, although it can be obtained for fifty cents in paper covers. We are informed that the American market has been secured by Messrs. TENNANT & WARD, of New York, and copies can doubtless be obtained from them.

AMONG recent corporations we note that of BURKE & JAMES, 118 W. Jackson Blvd., Chicago; capital, $150,000; manufacturing and dealing in photographic apparatus and supplies. Incorporators: HENRY BURKE, DAVID JAMES, and MARTIN J. ISAACS.

Beginning a few years ago with a comparatively small capital, the growth of this now well-known firm has few parallels in the photographic trade. The two principals, Messrs BURKE & JAMES, are young men of unusual enterprise and ability. By ceaseless activity and alertness they have secured control of some hundreds of specialties needed in the every-day practice of amateur and professional photography, and upon the excellent qualities of these and good business methods their prosperity has been firmly established. We have watched their progress with friendly interest, and wish them continued success.

THE Fifth International Congress of Applied Chemistry will begin its sessions in Berlin on May 31, 1903. This meeting will be the most important function of its kind ever held, and includes all departments of applied chemistry.

Special committees and subcommittees have been arranged for all countries. The general chairman of the American committee is Dr. H. W. WILEY, Chief of the Bureau of Chemistry of the United States Government.

Photochemistry is represented by Section IX., and it is hoped that all Americans interested in photochemistry will become members of this Fifth Congress. The fee for membership for Americans is $4.85. Members will receive the full printed reports of the proceedings and all the papers read during the session This publication in itself will be a very important one.

All American photochemists are requested to present

papers on photochemical subjects. If they cannot go to Berlin themselves, these papers will be read by Dr. LEO BAEKELAND, who is chairman of the Section on Photochemistry.

All correspondence on this subject or applications for membership can be addressed to Dr. LEO BAEKELAND, "Snug Rock," Yonkers, N. Y.

THE Rochester (N. Y.) *Democrat and Chronicle* of March 6th announces the victory obtained in the English courts by the EASTMAN KODAK CO. in the recent lawsuit to protect its trademarks. In effect the ruling of the court states that the word "Kodak" applies to films as well as to cameras. According to this, manufacturers of photographic specialties, other than the EASTMAN CO., will not be permitted to use the EASTMAN trademarks, such as "Kodak," "Brownie," etc., on their packages or in describing their goods. As a consequence of this decision the unsophisticated amateur (we presume there are such in England, but know of none on this side) who asks for a "Brownie" film will hereafter get a film made by the EASTMAN CO. for its "Brownie" camera, whereas in the past he was liable to get some other maker's film which fitted the "Brownie" camera. This is certainly as it should be. Let the public decide for itself what it wants, and see that it gets just what it wants.

THE *Chemical List* for March, published for free distribution by CHARLES COOPER & CO., 194 Worth St., New York, has reached our table. This useful digest of prices current should be filed regularly by professional photographers as a decided help to advantageous buying.

MR. MILTON WAIDE, formerly President of the Photographers' Association of Illinois, now located on Fifth Ave., New York, sends us a dainty booklet describing his *One Man Method of Photography*. Mr. WAIDE believes in individualism, and does all his own work, from making the negative to finishing the mounted print. In his booklet this is explained, with hints to sitters and other useful information. The booklet reads convincingly and is full of personal interest. We are glad to see that Mr. WAIDE is successful in his method, which is attested by the fact that he has held his Fifth Avenue Studio for some eighteen months or more.

IN answer to many inquiries we advise our readers that Albert's Collodion Emulsion is obtainable in this country from G. GENNERT, 24 East 13th St., New York, who will supply on demand a circular of information concerning the emulsion and its practical use.

THE EASTMAN KODAK CO., Rochester, N. Y., send to our table *The Kodak Portfolio*, a souvenir of their $4000 Prize Competition of 1902. It takes the form of a 9 x 12 folder, tastefully designed and embossed, and contains some fifty odd reproductions from the prize pictures of the contest. These are printed in colors on art paper, and make a very handsome collection of pictorial work. Copies may be obtained by sending the nominal sum of 10 cents to the EASTMAN KODAK CO.

THE photographers of Kentucky and Tennessee will meet in convention at Chattanooga June 16th to 19th. Particulars can be had from the Secretary, J. L. CUSICK, Louisville, Ky.

THE Third San Francisco Photographic Salon will be held in October next.

In order to encourage liberal contributions from pictorial photographers at home and abroad, and to save the expense of framing pictures that may not be accepted, as well as the greater expense of transportation, pictures suitably mounted or matted will be received from contributors in the United States, and such as are accepted by the Jury of Selection will be glazed by the Salon Executive Committee at the exhibitor's expense.

Foreign contributors may send their pictures either unmounted, mounted, or matted, as they desire, and the management will mount and glaze those accepted, and return the entire contribution to the owner after the exhibition free of charge.

With the above-named exceptions, the general rules which governed the second San Francisco Photographic Salon will prevail, the details of which will be set forth in the regular announcement shortly to be issued.

It is hoped that this early notice will result in the selection of dates for the holding of other salons that will not conflict; in other words, that dates will be so chosen as to allow sufficient time to intervene between the close of one salon and the beginning of the next, to enable contributors to send their pictures in turn to the various salons.

THE ANTHONY & SCOVILL CO., New York, ask us to announce that they will guarantee all their customers against any recovery (at law) that may be had against them by reason of dealing in *Ansco* roll films, provided that in the event of suit the ANTHONY & SCOVILL CO. receive notice thereof and be allowed to defend the suit, which they agree to do at their own cost. This announcement relates to the patent litigation existing between the ANTHONY & SCOVILL CO. and the EASTMAN KODAK CO.

"ANCIENT AND MODERN PORTRAITURE"
A New Folder Style originated by F. A. Taber, San Francisco
giving two portraits of Mr. Taber

WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XL. APRIL, 1903. No. 556.

FROM HEAD TO FOOT, YOUR BEST.

BY EDWARD L. WILSON.

THIS is not a howl. I only want to plead for a little more carefulness—more conscientious attention to details. About nine-tenths of the photographs one sees in these days of hurry-scurry are sent out without proper care having been given to their production. You may answer, and with a fair amount of justice, too, that my remark is not worth regarding, because in almost any business the bulk of things which are done are badly done—imperfectly, carelessly done. But from art—elevating, refining art—we expect better things; so I return to my argument and offer an illustration or two.

I have before me two photographs which are technically excellent, yet by no means faultless. One is of a lady, and is entitled "A Study in Posing." She stands, hat on, with her arms extended, holding an umbrella, closed, diagonally across her hips. The masses of light and shade represented by the head and hat are excellently managed—quite Rembrandtesque—the lines of the dress have had good care, and the accessories and background are carefully chosen; but that umbrella has damaged and discounted everything. To accommodate it the right arm and hand are pushed out of all naturalness and the left one is given the usual pump-handle pose. Thus the young lady has a pilloried look, constrained and painful. In her left hand she holds a dark glove. This has fallen upon the stick of the umbrella, in such a way that some of the fingers fall so naturally as to look like an extension of the fair one's hand dipped in some dark solution. The eye is directed to this distortion at once; it is the worst oversight in the picture.

The other illustration is a picture of a sturdy-looking youth, standing full-length, clad in football costume. There is determination in his eye; a star upon his breast and a football hugged to his side by one arm, while the thumb of the other hand is thrust behind his belt. It would have been a masterpiece in photography but for an inexcusable bit of carelessness on the part of the master. This lies in the posing of the young athlete's feet and legs. He stands at what in military parlance is called "parade rest," one foot and leg supporting the body mainly, while the other, with bended knee, is brought forward. There are many cases when this would have been all right; but in this instance the operator forgot the focus of his lens. As a consequence, one leg appears about one-third less in diameter than the other, and there is quite as great a difference in the size of the feet. The small leg is the first thing you see when you look at the picture, and you are forced to conclude that if the stalwart model can play football at all he must be forced to limp through the game.

Now, back to my point of observation: there is too much neglect of attention to the small but very important details by picture-makers—even by the first-rate ones. I will not try to explain the causes of this. They are numerous; but they can all be overcome by the use of *more head.*

The human mind becomes familiar with the proper forms of things by observa-

tion, through that delicately formed camera, the eye, which, through the optic nerve, carries the impressions received to the mind or understanding. The artist photographer, therefore, should endeavor to represent these forms as they impress the eye, and, by its means, the understanding. Photography and Fact are twins; but if the first attempts to distort the second the mind will detect the sin and reject the result as wrong. Attention to details, then, is what I insist upon. I wonder if I have made my meaning clear?

One of my art instructors used to say, "The artful way of making use of the lines and ornaments of a dress, so as to carry the attention unobtrusively to the head, is an accomplishment peculiarly valuable in the composition of a portrait. To do this successfully requires intelligence and taste, and very often qualities of distinction and elegance are gained by the right use of just such means." A little more might be added for the special use of the photographer, viz.: Remember the focus of your lens; examine all the *little* things before you expose; let what you do be—from head to foot, your best.

DO CONVENTIONS PAY?

BY W. I. SCANDLIN.

THE question of conventions, both State and national, is one that is likely, for the next several months, to be uppermost in the mind of the average photographer. Shall he prepare an exhibit and send it on; shall he prepare an exhibit and take it on; shall he go to convention without any exhibit; or will it pay best for him to ignore the convention entirely and remain at home? These are four aspects of the case which call for consideration and decision.

There are many things naturally entering into the consideration of such a subject as this, which affect different men in different localities in widely different ways. If the convention in question is to be held within a reasonable distance from his place of business; if it can be reached without the expenditure of too much time, trouble, and expense, the progressive photographer is likely to prepare an exhibit and go with it to the convention. This is, by all odds, the most reasonable thing that he can do. He who has at heart the best interests of his business, and who is desirous of improving his own technique and of raising the standard of appreciation in the minds of his patrons, will profit by this course.

The craft would profit materially if conventions could be more often held throughout the country, and a more intimate exchange of ideas and technique brought about. There is a tendency, which had its origin in the very beginning of photography and which has never yet been wholly eradicated, for the photographer to distrust his neighbor. This tendency has led to no end of petty jealousies and will doubtless be the cause of many more to come, and so long as it exists the cause of photography itself will be hampered and its progress hindered. There ought to be business enough in this country for all the photographers who are now operating studios, but this business can never be fully developed until the public has been brought to an understanding and appreciation of what constitutes good photography.

There are many styles and schools and methods of handling photographic portraiture, and there are many able workers who interpret their subjects with more than ordinary feeling and expression. These men should be known and their work should be studied, not only by their fellow craftsmen, but by the public at large. There exists no better way to-day for the accomplishment of this end than that provided by the photographic associations in their annual conventions.

The live photographer should consider it a part of the duty he owes his business not only to attend convention, but to prepare for it an exhibit representing the best work that he is capable of producing. This exhibit need not be extensive, but it should be good. It is a mistake often made to include in such a collection of prints a multitude of subjects, styles, and sizes.

Few of us are capable of producing equally good results along widely varying lines of work, and we should, therefore, select with the greatest possible care only those subjects and styles of treatment that appeal to us most strongly, and in which we are best able to infuse our own individuality and enthusiastic work. A collection of prints prepared on these lines cannot but be helpful to the man who gets them together, and will be instructive to those who examine them on the convention walls.

What if our competitor in a neighboring bailiwick does get a point or two from our exhibit that may help him to make his own work better? Can we not in turn obtain suggestions from the work of some other man that will strengthen our own hand? Let it be remembered that with every advance in the quality of the work our competitor produces the buying public is being educated to a point where it will better appreciate our own good work when properly brought to its attention.

The old-time spirit of rivalry and contention for prizes grows less bitter as the years go by. With the broadening effect inevitably resulting from photographic competitions this spirit will finally cease to count. The craft is fast coming to see with Burns that "A man's a man for a' that." Some of the closest friendships and warmest social relations have been built up upon chance acquaintances made at photographic conventions. These, too, among men who, under the old *régime*, would have considered themselves deadly rivals.

Those who make a practice of attending conventions realize the value to themselves and count the expenditure of time and money as one of the most important business matters of the year. Their work is planned in anticipation for it, and, no matter what else suffers, an appropriation is made early enough in the year to cover the expenses of convention week.

Investigation into the *personnel* of those who are regular attendants will show that they are among the brightest, strongest, most progressive and successful men in the photographic community.

If, therefore, it is in any way possible, we ought, I think, to exhibit and attend in person at least one photographic convention every year. If it is impossible to do both, let us be represented either in person or by exhibit; and if both these courses are beyond our reach, let us at least procure the fullest possible reports and give them careful study. The spirit of progress is abroad in every other field of usefulness, and we may rest assured that photography is not to be passed by. Bright and thoughtful men are constantly joining our ranks, and if we will keep pace with them we must be in touch with all that is best and most modern in our craft. We look to the associations to provide us with the best that can be obtained, and it lies with us to avail ourselves of the advantages they offer. In doing this we may make conventions pay.

THE BEST POSE.

THE photographer who "doesn't pose" boasts of the naturalness of his pictures. So far so good. But even on pose a man may come to grief if he is content to let the sitter fall into an unconscious attitude, and then to press the bulb; and even if the pose is secured it is not the whole battle.

It may be taken as correct that most people have a best pose; and that the best pose is a natural one. But the natural pose is not always the best for a portrait.

One of our well-known photographers invariably, when animated, falls into the 1864 pose: Left hand resting on the mantel or on a chair-back. Right hand on his hip, with arm akimbo, and legs crossed in a figure 4. So wedded is he to this pose, that out-of-doors he will take hold of a rail, or a lamp-post, and assume it. But if anyone pictured him in it he would have a fit. Such a man might be circumvented by getting him into a chair. Pose is very much a matter of outline—fitting the figure gracefully to a space; but it takes no cognizance of mass or of tone values.

Two friends may come into the studio; they may be equally erect, equally alert and graceful; equal and similar in size.

But one is dark and the other is fair. The dark one will "take well" facing the camera; but the fair one has blue eyes. The pose will not be the same for each.

The first essential of professional portraiture is a pleasing likeness; second comes the pictorial element. The old-line photographers for years sacrificed the former in a blind submission to some conventional conception of the latter. Look at one of those books on pictorial portraiture published some forty years ago. Why, the photographer became so imbued with his notions of what was a correct pose, and so worried after turning out "sound" work, that his customers linked him, ogre-like, to the dentist. The photographer of to-day resents, and with some reason, a comparison which has outlived its truthfulness. But its conception was not due to the customers of forty years ago, but to the photographers.

The "no pose" fiction has been useful as an antidote to the old-line pose; but when all is said it is a fiction. The fact remains that, working along the present lines of least resistance, intelligence and experience—yes, and patience—are still required if we are to attain the best pose.

Let us suppose the two friends: one dark and the other light. They may be two girls, or they may be a married couple. If the light for each of them is the same—we will suppose them taken together—the result will probably be that the fair one emerges from the negative pale-eyed, with a wan, washed-out complexion. To get the picture correctly, the dark person will need to be in the stronger light; the light for the fair one will need screening. The dark one will probably need a reflector to lighten her shadows. The same background will not be ideal for both. The light background that suits the paleness of the one will throw the other out in dark relief, and *vice versa*.

It is impossible not to pose elderly countryfolk who are unused to facing the camera. They have the old elsewhere exploded ideas concerning portraiture, and will expect to be trussed with headrest and backrest, and otherwise to undergo a pleasing martyrdom for their money. They can, of course, be caught by subtlety when they are chatting together, unconscious that the fateful moment has arrived; but the photographer does so at his peril. It is a dollar to a cent that they will be utterly displeased with any such picture.

If the photographer would be a successful portraitist he must not work for any pose but the best pose. He has done well in discarding the old, horrible, conventional poses; but he must still pose, following, however, the unconscious suggestion of the sitter.

In only one case can the "no pose" be carried out with complete success—with children who have emerged from babyhood and have not yet reached the second era of long clothes. To attempt to pose them is usually disastrous.

He must however—and this is the crux of the question—have his knowledge well in hand. There are scores of photographers who cannot decide which is the most suitable background until they have posed a sitter before several and judged the effect of each on the ground glass. They commence experimenting with their light as though without the slightest idea of what should be most suitable. And, worst of all, they place an exceedingly stout customer in half a dozen different positions, in trying for the best. As Jack Brumblecombe said, fat can feel as well as lean; and such sitters are apt to be sensitive.

The no-pose theory is a specious fable. The best pose is within the reach of the photographer who has mastered the details of his studio procedure, and who can unerringly do his part without experimenting while allowing the sitter to do his part.

Most photographers can master these details via experience and honest striving; the photographer who cannot, or does not, must perforce be content to do his best at good, solid posing.

One of the best known of all-round photographers says that if it were not for the children he could not keep his gallery open. The Eastman Co., it has been said, develops more negatives of babies than of landscapes. And yet few photographers push child portraiture. It well repays pushing.

THE POSE.

BY FRANK M. SUTCLIFFE.

"THE pose" is generally applied to the human figure, not to horses, dogs, cats, etc.; yet when other animals than man are drawn or photographed they are shown in such positions as bring out their best "points" to most advantage. It is so with the portraiture of mankind, only we do not speak of "points."

The expression "posing" has an ugly sound, for it too often seems that either the subject to be photographed is assuming a position unnatural to "it" or the photographer is placing the subject in some position "it" would not take of its own accord.

Many photographs bear on their face evidence of artificial posing, and prove either that the photographer was not sufficiently master of his art to be able to conceal the art he employed, or that the sitter was not sufficiently at his ease, or else that the photographer had mistaken his vocation or had not been properly trained in that vocation.

When one comes to think of it, there must be very few photographers who have had a proper training. There are—it is needless to write it—but two training grounds for those who would develop their skill in posing—the present and the past. It all depends on the student which course of study should be taken first. If the learner has been bountifully endowed at his birth, then he may take the present first, and take up the past at his leisure; but if he is like most of us, then he had better begin with the past. If possible, in Assyria or Egypt. If these are too far off, at the British Museum.

I have often wondered why the photographers in Bloomsbury are not the foremost in the world, for they have opportunities which few have; for there at the Museum they may see how the artists in the past have thought fit to pose their sitters. Why, a Bloomsbury photographer, without an atom of invention in himself, should be able to copy a fresh pose almost every day of his life from the examples given on the Etruscan vases alone.

One reason why the poses one sees in photographs are so artificial is because photographers look for inspiration to photographs instead of sculpture and painting and nature. The student who is wise enough to go back to the past will soon find out what an important part dress plays in the pose; it did so in the time of ancient Greece, it does so to-day. The works of Holbein and J. van Beers differ principally because of the difference in the quantity of clothing their respective sitters wore.

The painter has the advantage over the photographer in that he knows who his sitters are; the latter has to find out. He may mistake a duchess for an actress, or *vice versa*. One has only to look at the illustrated weeklies and monthlies to see how often this occurs. Sometimes the duchess is taken with her feet on the fender, instead of sitting on a balcony holding an arum lily.

Those who have studied old paintings, whether on pot, paper, or wood, will have noticed that in all these old portraits there is a dignity, a reserve, which modern photographs often fail to show. There is, in fact, less posing about them. The sitters appear at their ease, as if they were unconscious of being looked at; even when clothed in garments studded with precious stones, garments which must have cost many hundreds of pounds, they sit or stand with their hands together in the simplest positions imaginable.

It is a mistake for the painter or the photographer to put too much of himself into the portraits he makes; in a portrait we do not wish to be constantly reminded of the workman. It is, of course, difficult for the artist or the photographer to decide quickly on the sitter's most characteristic, or even one of his many natural, positions, without a much longer acquaintance with his sitter than is usually possible. It is better to let the sitter pose himself rather than ask him to take any position which the artist may have in his mind. Perhaps the sitter will at first pose consciously, but in all probability he will soon tire of this and become natural. If the painter sees any imperfections, such as creases and crooked

neckties, his brush will make all straight; the photographer has to be more particular, and sometimes has to suggest that a coat which is too tight might with advantage be unbuttoned. The photographer, to be successful at portraiture, must have an eye which takes in every little detail at a glance.

The positions the body takes depend greatly on health and strength, or the want of these qualities. The backbone in the strong remains straight and the shoulders square; to place a healthy man in a languishing, lackadaisical attitude is absurd. If the figure seems to be all angles and squares, never mind; it will appear all the stronger.

In those positions where the sitter is seated, the shape of the chair has much to do with the success of the pose. In a full-length figure in profile, unless the chair legs are well bent outward, the figure will sometimes appear to be falling backward. The conventional photographer gets over this difficulty by placing an imitation begonia or a palm behind the chair on the ground; this only makes confusion worse confounded.

Some people find it difficult to do nothing gracefully. If the sitter is a woman, and the photographer wishes to make a pleasing picture, and she is unable to appear natural when at rest, then it may be wisdom to place some light employment in her hands; but the action, the resemblance of work, should never be great. As Mr. Hewitt says: "It is a mistake to freeze a moment of time into an eternity of waiting," or words to that effect.

It will be noticed that well-proportioned people appear to take the most natural, graceful positions; those whose legs and arms do not come up to the recognized standard find a difficulty in appearing at their ease. The student who wishes to learn when his sitters *are* at their ease and when they are not, could not do better than study the drawings of the late George du Maurier.

Photographers too often forget that the position anyone takes is unconsciously dictated to the body by the mind. Every position should therefore show to some extent the working of the mind. When the hand is on a line with the arm, and when it drops helplessly from it, show two different moods—the alert and the quiescent. Why photographic portraits so often look like stuffed figures is because the limbs are not placed as if dominated by one idea. One arm will express action, the other one sleep; the neck will express pride; while the knees of the same body will express humility.

The photographer, therefore, should look for those positions which will call for least comment—positions where the sitter seems at rest. He will often be called upon to hide or modify defects, or at least shortcomings from the ideal. By judicious lighting, or rather shading, of any features of the body which appears unusual, he will be able to please his sitters. If at the same time he is able to make a pleasing combination of lines, and preserve a balance of light and shade, then he will have proved his claim to the title of artificer, which the dictionary says is "a skilful workman in some art."—*Amateur Photographer.*

THE RIGHT TO EXHIBIT PORTRAITS.

It may be remembered that about this time last year we made some comments on two decisions—the one in Scotland and the other in England—with reference to the right of a photographer to exhibit portraits taken in the ordinary course of business, that were diametrically opposed to each other. So far back as 1888 it was ruled in the English Court of Chancery, in the case of Pollard *versus* the Photographic Company, that a photographer had no right whatever to exhibit, or use for his own purpose, portraits taken of his sitters. The case in the Scotch Court was this: Enlarged portraits of two daughters of the plaintiff—in Scotland termed the pursuer—were being shown as specimens at a photographer's, and he sought to restrain their exhibition. The case came before the Sheriff's Substitute, who decided that the photographer had the right to exhibit them if he thought fit to do so, and he, there-

fore, refused to grant an injunction—or interdict. Just after this decision was given, another and similar case was brought in our Court of Chancery, before Mr. Justice Swinfen Eady, and here the decision was identical with that previously given here—namely, that the photographer has no right to exhibit, as was claimed by the defendant, against whom an injunction, with costs, was granted. We pointed out at the time that, although the forms of law in Scotland are different from what they are here, it was seldom that, in the main, the decisions were distinctly opposed to each other, but in these cases they were, for, while it was illegal to exhibit portraits in England, it, according to the Sheriff Substitute's ruling, was legal to do so in Scotland.

This decision, however, was appealed against, and the Sheriff Principal recalled it, and sent the case back for proof. After hearing proof, the Sheriff Substitute granted interdict, saying in a note that he did so "out of deference to the opinion expressed by the Sheriff." But the matter did not rest at this, for this decision in turn was appealed against, but, according to the *Glasgow Herald*, the Sheriff Principal adhered to it, with costs against the photographers. It will now be seen that after about a year's litigation it has been decided that photographers in Scotland have no more right to exhibit portraits of their sitters without their permission than have photographers in England. We surmise that these decisions, alike in Scotland and England, will meet the approval of most persons. In delivering judgment in the case of Pollard *versus* the Photographic Company tried in 1888, Mr. Justice North clearly deals with the relations between the photographer and the sitter, when he said: "The customer who sits for the negative thus puts the power of reproducing the object in the hands of the photographer, and in my opinion the photographer who uses the negative to produce other copies for his own use without authority is abusing the power placed in his hands."

In the Scotch case there is a point worthy of note: the negatives were not actually taken by the defendants. They were taken by Miss Adamson, whose business, with the negatives, etc., eventually passed into the hands of Messrs. Crow & Co., who were the defendants in the action. Here it will be seen that the sitter has control over the negatives after they have left the hands of the one who took them.—*British Journal of Photography.*

COMPARISONS OF DEVELOPERS.

MR. J. GÆDICKE, in the *Photographische Wochenblatte*, of recent date, has made an interesting comparative test of developers.

Each new developer has its champion, and it is rather hard sometimes to get down to the real facts. In testing developers, it should be remembered that the plate which records the impression must be harmonious—that is, capable of giving a good tone value to the high lights, shadows, and intermediate tones, and not too contrasting or too flat, as the case may be. A series of developers was made up, and plates developed in them which had been exposed under a sensitometer made of sixteen steps or layers of onion-skin paper. The records were as follows:

	The picture appeared in	Length of development.	Last number visible.	Intensity.
Rodinal	25 seconds.	3 minutes.	13	Moderate.
Edinol	22 "	3 "	13	Moderate, very clear.
Pinakol	15 "	2 "	13	Moderate.
Adurol	20 "	3 "	13	Strong.
Amidol	13 "	2 "	13–14	Pretty strong.
Ortol	21 "	2 "	13	Little less strong.
Glycin	37 "	4 "	13	Very strong, very clear.
Metol	5 "	1 "	13	Moderate.
Hydroquinone	80 "	5 "	13–14	Strong.
Pyrocatechin	165 "	11 "	13–14	Very strong, very clear.

The most rapid developer is metol; the slowest glycin, hydroquinone, pyrocatechin; the most intense negatives were produced by glycin, hydroquinone, adurol, and pyrocatechin; the clearest by pyrocatechin, glycin, and edinol.

The keeping qualities of the solutions which are ready for use are excellent in the case of rodinal, but remarkable in the case of adurol. Amidol and ortol also keep well; edinol and pinakol will keep least of all. From the above experiments it appears that adurol and glycin do not receive really as much consideration as they deserve, which is possibly due to the fact that the public is not sufficiently familiar with them. Adurol possesses the following advantages:

1. A solution of adurol ready for use and in the proper strength will keep perfectly white for a very long time, even when the bottles are only partially filled; and in this respect it is superior to the other developers, especially to edinol and pinakol and pyrocatechin.

2. Adurol is the quickest working developer of those four developers which yield the best intensity, and it combines in the highest degree speed and intensity.

3. From the experiments it has been shown that adurol produces negatives which render more nearly correct light values than any of the other rapid developers.

4. It is superior to hydroquinone for the reason that it is not affected by the temperature.

WORKROOM RECIPES.*

1. Blackening Brasswork. Prepare two solutions. Copper nitrate, 200 gr.; water, 1 oz. Silver nitrate, 200 gr.; water, 1 oz. Mix, clean the articles thoroughly, and then place in solution. Remove and heat strongly.

2. Dead Black Varnish. Benzol, 1000 parts; India-rubber in shreds, 6 parts; asphaltum, 300 parts; lampblack as required.

3. Dead Black for Woodwork. Shellac, 40 parts; borax, 20 parts; glycerine, 20 parts; water, 500 parts. After dissolving add 50 parts aniline black.

4. Dead Black for Wood. (*a*) Borax, 30 gr.; glycerine, 30 minims; shellac, 60 gr.; water, 1 oz. Boil till all dissolves and add nigrosine W.S., 30 gr.

(*b*) Copper chloride, 75 gr.; potass bichromate, 75 gr.; water, 2¼ oz. Paint with this, let dry, and apply: Aniline hydrochloride, 150 gr.; water, 2¼ oz. Wipe off any yellow powder that forms, repeat process till black enough, and finally rub over with boiled linseed oil.

5. Black for Aluminum. Clean with fine emery, wash well, and dip rapidly in: Ferrous sulphate, 1 oz.; white arsenic, 1 oz.; hydrochloric acid, 12 oz.; water, 12 oz. When the color is deep enough dry off with fine sawdust and lacquer. The metal should be very rapidly dipped and as quickly withdrawn from the mixture and allowed to drain, repeating the operation, if necessary.

6. Liquid Glue. Swell glue (8 oz.) in water (10 oz.). Dissolve on water-bath and add slowly, with constant stirring, nitric acid, sp. gr. 1.33 (2½ oz.). Keep well corked.

7. Damp-proof Glue. Dissolve common glue in the smallest possible quantity of water, and, while hot, add one-quarter its bulk of linseed oil, stirring rapidly during the addition.

8. Cement for Vulcanite. Sulphur, 1 part; caoutchouc, 3 parts; alcohol, 6 parts; bisulphide of carbon, 100 parts. Mix alcohol and bisulphide, and then dissolve caoutchouc and sulphur therein. Evaporate to consistency of thin paste. Join the fractured edges with this and heat the whole to about 300° F. for four hours.

9. Marine Glue. India-rubber shreds dissolved to saturation in crude benzene, 1 part; shellac, 2 parts. Mix by aid of heat.—*Jeffrey.*

10. Cement for Porcelain Dishes. Water-glass, 6 parts; fish glue, 4 parts; precipitated chalk, 1 part. Rub down to

* From "Figures, Facts, and Formulæ of Photography."

a paste, brush over broken surface, press into contact, and dry in warm place.

11. SULPHUR CEMENT FOR PORCELAIN. Sulphur, 7 parts; white pitch, 5 parts; bleached lac, 1 part; mastic, 2 parts; elemi, 2 parts; finely-powdered glass (this must be as finely ground as flour), 7 parts. Melt the first five ingredients together by heat, and finally stir in the glass powder, which should be shaken in through a fine sieve.

12. CEMENTING GLASS TO GLASS OR TO METAL. Heat guttapercha and shellac (equal parts) in a jar placed in a saucepan full of sand, which, when placed on the fire, enables the mixture to be melted; or mix glycerine and litharge in very fine powder to dough-like consistency. In mending dishes moisten first with glycerine, then apply the cement and bind together for a day or two. Or dissolve thin shreds of gelatine to saturation in acetic acid and fill into small bottles. Stand the bottle in hot water before use. This is known in the jewelers' trade as "Diamond" or "Armenian" cement.

13. CEMENT FOR LEATHER. Guttapercha in carbon disulphide, made syrupy. Use hot.

14. GUTTAPERCHA AND PARAFFIN WAX VARNISH. Very suitable for waterproofing dishes. Take equal parts of wax and gutta, melt the gutta in a saucepan, add the wax, and mix thoroughly. Apply hot.

15. WATER-TIGHT VARNISH. Brown resin, 8 oz.; beeswax, 2 oz. Melt together in a tin pan, and, when quite fluid, coat the dish, which should be quite dry and warm.

16. WATERPROOFING WOODEN DISHES. (*a*) Inside and out, two coats each of Brunswick black.

(*b*) Asphalt (1 part) in benzol (20 parts). Two coats.

(*c*) Melted mixture of resin and beeswax (equal parts). Iron into the wood with a hot flat-iron. Melted paraffin, used in the same way, also answers well.

(*d*) Shellac varnish (section 13, paragraph 2).

17. WATERPROOFING WOOD. Asphalt, 4 oz.; pure rubber, 30 gr.; mineral naphtha, 10 oz. Apply three coats with a stiff brush, drying after each.

18. VARNISH FOR WOOD. Useful for inside of wet-plate slides, etc. Sandarac, 4 oz.; Columbian spirit, 12 oz. Dissolve and add 200 grains *Venice* turpentine.

19. VARNISH FOR BRASS. Celluloid, 7 gr.; amyl alcohol, ½ oz.; acetone, ½ oz. Used cold.

20. BLACK VARNISH. Benzol, 10 oz.; turpentine, 1 oz.; masticated rubber heated to fusing, 100 gr. Dissolve the rubber in the benzol and turpentine; add 4 oz. of asphaltum, broken small.

21. ELASTIC CAOUTCHOUC VARNISH. Heat two parts of common resin in a saucepan until it gives off a vapor, add one part of caoutchouc, and stir until thoroughly mixed; then remove pan from stove and add two parts linseed oil; heat well and stir until quite cold.

22. TO CLEAN BOTTLES—from photographic solutions: Spirits of salts mixed with equal bulk of water.

——— from grease: Commercial benzol followed by strong soda solution.

——— from varnish: Columbian spirit (10 parts) and ammonia (1 part); then ammonia and water (1 in 10), and, lastly, water.

23. INK FOR GLASS BOTTLES. Dissolve powdered copal (60 gr.) in warm oil of lavender (1 oz.) and mix on a stone (with a palette knife) with lampblack (6 gr.) and indigo (2 gr.).

24. LUTE FOR ETHER, SPIRIT, ETC. Melt good glue (3 parts) in hot water (9 parts) and stir in glycerine (2 parts). Color with aniline dye and dip necks of bottles (free from grease) in mixture.

25. WHITE INK. Gum arabic, 1 oz.; water, 4 oz. Strain through muslin and add enough zinc white to make the ink smooth. Rub up on a glass plate with palette knife or glass muller. If too thick dilute with water. To preserve add a few drops of carbolic acid.

26. FINE MATT ON GLASS. Dissolve gelatine (20 gr.) and sodium fluoride (20 gr.) in warm water (1 oz). Pour over glass, allow to set while level, and leave to dry; then immerse in hydrochloric acid (½ oz.) and water (8 oz.) for thirty seconds and set up to dry. Fine matt on cleaning off the gelatine.

27. SILVERING MIRRORS — DRAYTON'S PROCESS.—A mixture is made of 1 oz. of coarsely-powdered nitrate of silver, ½ oz.

of spirits of hartshorn,* and 2 oz. of water, which, after standing for twenty-four hours, is filtered, and an addition is made thereto of 3 oz. of wood alcohol at 60° above proof, or naphtha. From 20 to 30 drops of oil of cassia are then added, and, after remaining for about six hours longer, the solution is ready for use. The glass to be silvered with this solution must have a clean and polished surface. It is to be placed in a horizontal position and a wall of putty or other suitable material formed around it, so that the solution may cover the surface of the glass to the depth of from ⅛ to ¼ of an inch. After the solution has been poured on the glass from 6 to 12 drops of a mixture of 1 part, by measure, of oil of cloves with 3 of Columbian spirits are dropped into it at different places, or the diluted oil of cloves may be mixed with the solution before it is poured upon the glass. The more oil of cloves used the more rapid will be the deposition of the silver, but the operation should occupy about two hours. About 18 grains of nitrate of silver are used for each square foot of glass.

28. Furniture Cream. Linseed oil, 80 parts; spirits of camphor, 8 parts; vinegar, 16 parts; butter of antimony, 4 parts; liquid ammonia, 1 part, and water 1 part. This must be applied sparingly by means of a piece of old flannel, and well rubbed off with very soft rags.

29. To Renovate Morocco Leather. White of five eggs; sperm oil, 6 oz.; acetic acid, 6 dr.; glycerine, 6 dr.; oil of turpentine, 1 oz.; Columbian spirit, 5 oz.; water *to* 30 oz. Beat the eggs thoroughly with an egg-beater. Mix the oils, acid, and glycerine, and add gradually to the eggs, using the beater constantly. Transfer to a bottle and add the spirit diluted with its own volume of water; finally, make up to measure. Aniline dyes may be added according to color required. About 200 grains will be sufficient for the foregoing quantity of reviver.

30. Varnish for Restoring German Gilt Mouldings. Gamboge, 30 gr.; dragon's blood, 240 gr.; powder and add: tumeric, 30 gr.; shellac, 2½ oz.; sandarac, 2½ oz. Place the whole in a bottle and add 2 oz. dry oil of turpentine. Shake often and keep in a warm place for fourteen days. Filter and add 4 oz. of clear mastic varnish, as in sec. 13, par. 2.

31. Rubber Stamp Ink. Aniline red, (violet), 90 gr.; boiling distilled water, 1 oz.; glycerine, 30 gr.; treacle, 15 gr.

32. To Recover Fogged Plates. Immerse for five minutes in chromic acid, 30 gr.; potass bromide, 60 gr.; water, 10 oz. Wash dry; reduces speed considerably. They can be made suitable for use as transparencies by soaking them in the following solution: Potassium bromide, 1 oz.; potassium iodide, 60 gr.; warm water, 2 oz. When dissolved add hydrochloric acid, 2 oz.; potassium bichromate, 1 oz.; water *to* 80 oz. The plates should be well washed after immersion (in the dark room, of course) and dried. They will require eight times the normal exposure, and should be developed with hydroquinone.

33. To Dull Bright Surfaces of Machinery, etc. Make thin cream of white lead and turpentine, add lampblack to make a gray tint, and then one-sixth the bulk of gold size. Paint over and remove afterward with "cotton waste" damped with benzene or turpentine.

* Spirits of hartshorn is a mixture of liq. ammoniæ forte 1 part, water 2 parts.

APPEARANCES IN BUSINESS.

The advent of spring light has caused many studios, and the apparatus and furniture in them, to have a far more shabby and dingy appearance than was conspicuously noticeable during the dull weather of the past few months. Dilapidated and dirty furniture in the reception and dressing rooms, and dingy-looking apparatus and accessories in the studio, do not tend to inspire confidence in sitters. Although general slovenliness may not show in the portraits, customers may possibly feel doubtful on the point, and such doubts, when felt, may sometimes influence the expression. Appearances tell for more than many portraitists seem to realize. Here is a case in point that may be quoted. Those who are in the habit of attending

lantern entertainments have often noticed the effect produced on the audience on the uncovering of a highly-polished biunial, with plenty of well-lacquered brasswork about it, as compared with one of a shabby and woe-begone appearance; though the latter may really be the better apparatus of the two. The lay public are prone to the idea that the more showy the apparatus the better must be the results obtained with it, be it a lantern or photographic appliances.

Photographic studios, as a rule, are by no means patterns of cleanliness and general tidiness. Some few of the higher class ones are, it is true, but in the majority of cases the middle and lower classes are just the reverse. The apparatus is often lacking in polish, the furniture more or less dingy, and the rococo accessories, where they are used, chipped, and too frequently dusty, while the blinds and curtains are dirty and stained. This state of things usually comes about so slowly, and the owner has become so familiar with them, that he fails to realize the real state of affairs. Not so with strangers, however, who see the place for the first time. They are at once impressed with them, and not always favorably. It is true this makes no difference in the quality of the work turned out, but too frequently the sitter may have misgivings on the point, and that may influence the expression during the exposure.

If a new studio is opened in a country town with everything "spic and span," it often draws a large proportion of custom from the older ones simply by its appearance being so much superior to the others, even though the work issued from it may be of a really inferior class. Appearances in photographic establishments tell far more than their proprietors usually seem to fully appreciate. With many the state of affairs we are dealing with arises from neglect or indifference; in others it is more or less a question of ways and means. Some photographers, after the winter stagnation of business, are not prepared for any great expenditure of cash, yet at the commencement of the season renovation is of the greatest importance. In many instances a general furbishing up need not entail any great cost, supposing the photographer does not consider it infra dig to do the greater portion of the work himself, aided perhaps by an assistant.

Any photographer, we should surmise, can use a paint-brush, and most oilmen mix paint to order at a few pence the pound, and a few pounds of paint will work wonders to begin with. Accessories are not difficult to repair, and anyone with a little ingenuity can do the needful with them. Composition ones are always liable to become chipped and show white spots, but they may be readily hidden with a little color, even if the injury is not small. If, after repair, they are given a coat of distemper, supposing they were distempered in the first instance, they will then look like new. If they were colored in flatten oil, a coating of flatting color will bring about a similar effect. The laundress will do what is necessary with the linen blinds or curtains, while the woollen ones had best be handed over to a dyer and cleaner. If carpets, when they have been beaten and relaid, be washed over with water, to which some ox gall may be added, their colors will be greatly revived, as most housewives are aware. A little linseed oil rubbed over oil-cloth, after it has been well cleansed with soap and water, will greatly improve its appearance.

The look of the apparatus usually makes an impression on customers. They frequently imagine that the better it is to look at the better must be the work produced with it; yet how often is this overlooked by its owner. He knows that its shabby appearance does not impair its working qualities, hence it remains as it is; whereas if a few hours' work, in spare time, were expended upon it, the things, to a layman, would look much superior. It is not everyone who is *au fait* with French polishing, but, without that, the apparatus can be very successfully renovated by its owner. What has to be done is to take it in as many pieces as can be done with a screwdriver and then clean the parts with soap and water, so as to remove every trace of dirt. Then, when dry, use one or other of the commercial furniture polishes, or French polish revivers, according to the directions issued with them.

The parts are then put together again, and, if the work has been carefully done, the apparatus will look almost like new. Why we advise the apparatus to be taken to pieces is this: The dirt that has accumulated with constant dusting accumulates in the corners and crannies, and cannot be removed without; and, if it were allowed to remain, the polishing would make it really more conspicuous than it was at first.—*British Journal of Photography.*

HOW I COMMENCED.

BY J. O'HARA.

SIX years ago I was an amateur photographer, but with a strong intention of joining the fraternity. Six years ago I was earning $30.00 a month, and now I clear $800 a year, or double. So that I have never regretted the decision which led me into photography and into one of the best little businesses in Canada.

I don't suppose that I had any special luck in the matter. This town has 8000 people in it, and it has three photographers. Besides this, a travelling tintype man works the little towns in the district every summer. Last summer we had four photographers, but one works now in the sawmill. I have read it so often in the MAGAZINE, that perhaps others who have read it will smile when they see it again; but I got on by hustling just a little more than the other fellows. I believe they look on me as a pirate yet, but everybody must start sometime and most of us have been newcomers or interlopers at one time. And at least I did not start by cutting prices.

When I started, I figured it out like this: Business will have to be hunted after; it will never come any other way. Now, any man ought to be willing to work ten hours a day; if he is in a store, he will have to work longer—and I had had a dose of it, clerking till nine o'clock every night. So I was doubly willing to work long hours when it was for myself. Every young photographer, unless he is very lucky, must have a lot of spare time on his hands. If so, he can either work as hard as he can when there is anything to do, and have the rest of the time free; or, he can work in a loafing sort of way and keep quietly moving on. I chose the first plan and had lots of time on my hands. I reckoned that as the time was there it would pay me to use it, even if I got no pay for it—it would even then be better spent than if I wasted it on five-cent cigars. I was spending fifty cents a week for advertisements and notices in our paper; and I had some letter-heads printed and wrote a letter to every house in the town, and to all the farmers for five miles round. That cost time, and very little else except some mailing; and it was all "found time." I always tried, right from the word go, to have something new to show—the idea of "novelties" is a good one. I have no doubt that it will do a man good to go to a college of photography; or to work for some photographer. But if he has not such chances he can learn from reading, and practising hard—if his mind is set on it. I know that some of the books which are supposed to be instruction books are pretty rank; and I have wasted a dollar on them more than once. But others give hints which help; and I get three magazines, which I could not do without. But I am always more interested in what tells how to do something than in talks about composition or art.

When I began, I spent part of every evening writing letters. All my "spare" day-time went to practising retouching and learning to color photographs. Colored portraits were my first leading line, and I was very proud when I put the first one in my window. I used to charge 25 to 50 cents each extra; and quite many people who had a dozen prints would have one of them colored. The first six months after showing them they must have brought me in $15.00; which was all money I might have missed. Against it there was only spare time and cost of the colors and brushes, which was very little.

I tried carbon printing next, and spent more money than I could well afford; but

it was not a success, for, either because I did not do it right or for some other reason, people never cared to pay the extra price for it. But later on—two years ago—when I tried platinum paper I had better luck.

The carbon taught me to go carefully. I mostly went in for new lines whose main cost was time. Passepartouts quite caught on; and all the glass was supplied by old negatives. I used 5 x 7 mostly for these, with a mounted print behind. The mount was usually a piece of rather thin card—not the thick, gold-printed mount that I use for ordinary work. The paper to bind the edges was bought—a dozen sheets—from a Toronto firm; and I cut it into strips myself with a very sharp knife.

I found it a good idea to use toning which gave new colors. I always tried to make sure that it would not fade the print.

I am always very much interested in the pictures in the magazines. When I see a a new pose I remember it until a suitable customer comes; then I use it, and so get a name for having a good many styles.

I do not hire help—directly. My wife helps all that is needful. We figured it out this way: She liked being in the gallery; and if we wanted to hire help we might best hire it for mopping and cleaning in the house. So we hire a woman to come; and so far the plan works well.

I believe that as long as I keep alive and up to the times, photography will pay me a good living. And I believe it will pay most young men who are in it if only they will set to and hustle. But it is no good only doing what comes along. All the "spare time" must be turned into work or into money.

PHOTOGRAPHIC VARNISHES.

BY H. C. STANDAGE.

THE development of photography during the last ten years has necessitated the production of a large array of accessories. Formerly a few varnishes for preserving negatives and enabling retouching to be performed were all that were necessary; now, however, a much larger variety of varnishes and lacquers is needed in the various operations incident to a many-sided subject like photography. In the following recipes and formulæ will be found instructions for preparing all sorts of varnishes that are used or likely to be used in photographic manipulations. Many of them are treasured as trade secrets, and in exposing them to the public view we do so with the hope of helping many an operator over a difficulty. He, of course, will select that particular formula which will best suit his wants.

The usual resin made use of for a photographic varnish is sandarac. The resin is of great antiquity, and is commonly called gum juniper by dry-salters; it is not a fossil resin like amber, but is obtained by making incisions in the bark of a small tree growing in the northwest of Africa, and also from trees growing in Australia. There are three varieties of sandarac met with in commerce, viz.: (1) *Choice sandarac*, in the form of tears, something like those of mastic or in thin rods not more than one-fifth of an inch in thickness or one inch in length, which, however, get broken up into shorter bits by handling in commerce. The color is pale and very much like mastic, but although transparent it has not the shining appearance of tears of mastic, but is covered with a whitish dust. (2) *Common sandarac* is of a deeper color, sometimes brown, with a reddish tinge, but it is less transparent and often impure. This also occurs in tears. (3) *Australian sandarac* consists of pieces much larger, but also in tears and non-transparent. In chemical composition sandarac consists of three resins, which may be separated one from the other, but they do not differ much in their behavior with the usual solvents. In physical qualities sandarac is hard, but brittle, and has a slightly conchoidal (*i. e.*, shell-like) fracture, which has a glistening lustre when fresh, but it is easily crushed between the teeth, and becomes reduced to a fine powder, which, however, does not agglutinate together. This fact is a distinguishing one, which enables sandarac

to be differentiated from mastic resin, which does agglutinate when chewed. In taste it has a slightly bitter balsamic flavor and a faint smell of turpentine. At 100° sandarac begins to melt, and at 135° catches fire, and at the same time emits a characteristically pleasant smell. The density varies from 1.05, 1.066, and 1.092, according to different authorities. Old samples have a mealy appearance, due to dust on them. This dust is not due to attrition of one fragment against another, but to the unequal contraction of the resin in drying, which results in a mass of fissures that form facets, and which gradually separate from the mass and form a powder. In hardness sandarac is equal to Kaura copal. The solubility of sandarac differs. Thus, it is soluble in ether, and hot alcohol completely dissolves it, and amylic alcohol and acetone also dissolve it, but sandarac is only partially soluble in turpentine, chloroform, and carbon bisulphite, while it is but slightly soluble in benzole and petroleum ether. These facts should not be lost sight of, unless when making varnishes with these resins as a solid. Owing to the plentiful supply sandarac is very seldom adulterated—as a matter of fact, it is often used as the adulterant of higher-priced resins. Sometimes, however, a good quality of sandarac may be adulterated with German sandarac (*i. e.*, gum juniper), a resin which is exuded exclusively by old juniper bushes.

The best test for such an adulterant is to heat the suspected sample, which, if pure, will give off its characteristic odor, which is easily recognized; also, compared with a sample of pure sandarac similarly treated.

Another form of photographic varnish is prepared from collodion, a description of which would be superfluous to all photographers.

VARNISH FOR PHOTOGRAPHIC NEGATIVES.

Alcohol	100 parts.
Sandarac	18 "
Spirits of Lavender . . .	1 part.

All parts by weight.

Put the sandarac into a flask or bottle, and pour the alcohol on the resin. Then stand the bottle before a fire or over a gas-stove on a water-bath or sand-bath. It is best to stand the bottle in a saucer or other receptacle, so as to prevent the escape or loss of the contents should the bottle become cracked or burst. The heat should be sufficient to support and to cause the spirit to boil (*i. e.*, emit bubbles) till all the resin has dissolved. The bottle should not be closed too tightly, but only with a cork that has a V-shaped slit cut vertically into its side. This slit will permit the vapor to escape if the spirit becomes too hot, and so prevent the hot vapor bursting the bottle. A tin can is a good article for preparing the varnish when large quantities are to be prepared, but such a vessel does not permit inspection of its contents, so that you cannot readily know whether all the resin is dissolved. When the resin has dissolved in the spirit, and while the solution is hot, the spirits of lavender should be added so as to give brilliancy and transparency to the varnish. In using a water-bath—that is, a vessel in which water is placed to keep at the boiling-point while the vessel holding the varnish ingredients is stood in the boiling water—a slab or mat of asbestos is a good, serviceable article to prevent the bottom of the vessel becoming cracked by the heat. If a sand-bath be used there should be a thin layer of sand maintained beneath the bottom of the vessel. A saucepan forms a useful receptacle for forming a water or sand bath. If a tin vessel be used the bottom of it should not be soldered, but fastened by a lap joint in the metal. The precautions are necessary to the novice in varnish making, as by being forewarned he will be forearmed as to what risks are avoided in preparing a varnish when heat is required.

If two fluids be used as solvents—such as alcohol and turpentine—they should be mixed and the sandarac dissolved in the mixed fluid, unless the formula direct otherwise.

No. 1.—*Varnish for Black and White Work.*

Australian Sandarac . .	360 parts.
Venice Turpentine . . .	360 "
Columbian Spirits . . .	181½ "

All parts by weight.

Dissolve the solids in the spirits by the aid of heat as above described.

As spirit varnishes are very troublesome to filter and require special appliances to effect a perfect filtration, it is best to

clarify the varnish by letting it stand undisturbed for some days, and then pouring off the clear fluid from the sediment, which will possibly contain *débris* of bark, leaves of the plant from which the resin was obtained. In clarifying varnish by standing, the varnish should be maintained at a uniform warm temperature, so as to prevent the deposition of any of the wax constituent in the solids which form the basis of the varnish.

No. 3.—*Retouching Varnish.*

Ether	10 parts.
Sandarac	6 "
Mastic	6 "
Shellac Orange	1 part.

Digest altogether at a gentle heat, and allow any deposit to settle. Then pour off the clear fluid for use.

No. 4.—*Varnish for Negatives.*

Strong Alcohol	350 parts.
Bleached Shellac	35 "
Mastic	10 "
Venice Turpentine	1 part.
Oil of Lavender	a few drops.

No. 5.—*Quick Drying Varnish for Negatives.*

Oil of Turpentine or Oil of Lavender	40 parts.
Chloroform	10 "
Sandarac	1 part.
Mastic	2 parts.
Dammara Resin	4 "

Powder the resin and pour the chloroform over. Then add oil of turpentine or lavender, and digest the whole over a sand-bath until all are dissolved. Filter the varnish, while hot, through cotton-wool placed in the neck of a glass funnel, or else strain it through a piece of cotton fabric, and keep in well-corked bottles.

No. 6.—*Dry Plate Varnish.*

Mix together equal weights of Japanese gold size and refined benzole, and apply to the plate when dry but warm. Drain off the excess of the varnish, and let the plates dry in a room free from dust for ten to twelve hours.

No. 7.—*Mixed Varnishes for Negatives.*

Lavender	28 fluid ozs.
Sandarac	4 ozs.
Oil of Lavender	3 "
Chloroform	5 drachms.

Digest altogether at a gentle heat.

No. 8.—*Cheap Varnish.*

Easily rubbed up for retouching and easily renewed.

White Hard Varnish	3 parts.
Columbian Spirits	5 "

Mix together and warm to insure incorporation.

No. 9.—*For Negatives, as Retouching Varnish (by Rubbing Down with Powdered Resin.)*

Alcohol	50 fluid ozs.
Sandarac Resin	9 ozs.
Turpentine	3½ "
Oil of Lavender	1 oz.

Digest the sandarac in a mixture of alcohol and turpentine altogether. Clarify, and then add the lavender oil to the clarified portions.

No. 10.—*The following is Useful for Gelatine Negatives.*

Alcohol	18 fluid ozs.
Sandarac	2 ozs.
Castor Oil	3 drachms.
Oil of Lavender	1½ "

Mix the alcohol and lavender oil and digest the solids in the mixed fluids. Then add the castor oil, keep the mixture warm until the solids are dissolved. Add a teaspoonful of whitish or prepared chalk, shake up well and set aside for these ingredients to deposit. Pour off the clear fluid for use.

No. 11.—*To be Used on Warm Negatives.*

Rectified Alcohol	250 parts.
Bleached Lac	30 "
Mastic	10 "
Venice Turpentine	1 part.

The following are useful for retouching negatives:

No. 12.

To every six ounces of alcohol add one ounce of lavender. Dissolve by heating, and then add four ounces of castor oil.

No. 13.

Alcohol	300 parts.
Sandarac	50 "
Camphor	5 "
Castor Oil	10 "
Venice Turpentine	5 "

No. 14.—*For Retouching Thin Film the following is Useful.*

Alcohol (specific gravity, 830)	60 parts.
Sandarac	10 "
Camphor	3 "
Venice Turpentine	10 "
Oil of Lavender	3 "

Allow this varnish to harden before using the retouching pencil.

Collodion varnishes are very familiar to all photographers, but this paper would not be complete without giving some formulæ for the production of these useful varnishes. They are waterproof and can be made very flexible by adding a little castor oil. Collodion is one of the nitrates of cellulose, to which gun-cotton, pyroxylin, and dynamite are allied. The solvent of collodion is a mixture of alcohol and ether. Mixture: 1 part of collodion and 3 of alcohol and 18 ounces of ether. For a photographic varnish the proportions are:

Collodion	1 part.
Alcohol	1 "
Ether	1½ parts.

The color and brilliancy of such a varnish can be varied by adding 25 parts of bisulphide of carbon or of benzole. As water affects the quality of the varnish, the

collodion should be thoroughly dry before being dissolved. This is best effected by standing the collodion in a saucer, together with another saucer containing sulphuric acid, beneath a bell jar for a few hours. The acid is very hygroscopic and will absorb the moisture out of the collodion. Sometimes camphor is added to the collodion varnish, even to the extent of 50 per cent. It is absolutely necessary to have a mixture of alcohol and ether as the solvent. Acetone, wood alcohol, and acetate of amyl also dissolve collodion. The varnishes with acetone are opaque compared with those obtained by the addition of camphor. Wood alcohol has the same effect when it contains acetone in appreciable quantity.

Collodion dissolves very easily in acetate of amyl (nitrobenzole), yielding a bright, colorless, transparent varnish, which gives a coating that is more malleable than that yielded by the ordinary solution. This is how the varnish so widely known as zapon is made. Zapon spreads evenly over glass and gives a more homogeneous coating than other collodion varnishes, but it dries more slowly and is very flexible and suited alike to metal and to glass. The following method is a good one to follow in preparing such a varnish:

Gun-cotton	15 parts.
Acetone	100 "
Amyl Acetate	200 "
Benzine	200 "

Dissolve the gun-cotton in the acetone, and then add the amyl acetate and benzine. The solution is then clarified by decantation and filtration.

The varnish thus prepared forms a supple adherent coating which does not shell off. The following formulæ are those of three well-known collodion varnishes:

No. 15.

Amyl Acetate	1 gallon.
Benzole	1 "
Pyroxylin	10 ozs.

No. 16.

Nitrocellulose	100 parts.
Amyl Acetate	150 "
Amyl Alcohol	150 "

No. 17.

Nitrocellulose	100 parts.
Amyl Acetate	400 "
Amyl Alcohol	400 "

Very much allied to collodion or celluloid, although this differs very considerably in its nature—nevertheless, collodion is closely akin.

It is a mixture of pyroxylin and camphor. Celluloid, when dissolved in a suitable solvent, yields varnishes, colorless, brilliant, and very adherent, flexible and easily colored, and rendered very supple by the addition of castor oil. These varnishes have a greater resistance than collodion varnishes, and yield a coating which does not shell off.

Celluloid is dissolved in the same solvent as that used for collodion. This is a mixture of alcohol and ether or pure acetate or acetone and amylic alcohol. The celluloid should be perfectly dry before being dissolved. A mixture of acetate of amyl and acetone produces photographers' crystal varnish, which is applied cold, giving a perfectly transparent coat. By adding a small quantity of gum resin a layer which has not such a polish is obtained; and this is more suitable for retouching. Wood spirit is the vehicle best adapted for thinning down celluloid varnish. For coloring these, a solution of aniline dye in strong alcohol is made. The necessary quantities are carefully mixed with the varnish while stirring.

Formulæ for Celluloid Varnishes.

No. 18.

Celluloid	5 parts.
Amyl Acetate	16 "
Acetone	16 "
Methylated Sulphuric Ether	16 "

No. 19.

Celluloid	10 "
Amyl	30 "
Acetone	30 "
Methylated Sulphuric Ether	30 "
Camphor	4 "

No. 20.

Celluloid	5 "
Amyl Acetate	50 "

No. 21.

Celluloid	5 "
Amyl Acetate	25 "
Acetone	25 "

These varnishes are prepared by dissolving the celluloid in the fluid solvent.—*The Junior Practical Photographer.*

A Simple Pose. By W. N. Brenner, Cincinnati.

FIG 1.

FIG 2.

FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

Illustrating the article on "The Hair in Portraiture." By Rev. F. C. Lambert.

THE HAIR IN PORTRAITURE.

(With Illustrations by the Author.)

BY REV. F. C. LAMBERT.

In a previous note something was said about the treatment of hands in portraiture. We now propose to offer a few observations on the matter of hair. The reader may at first glance think the two details have nothing in common. But on further reflection he will be led to observe that, while there are points of difference, there are, at the same time, features in common to the two cases. Of course, the method of arranging the hair is to some extent within the control of the sitter. But supposing we were able to induce him or her to make an alteration. This would not be at all wise. Because we should be altering the general appearance of the sitter. His or her friends, on seeing our picture with unusual style of hair, would exclaim: "There is something unusual about it. This is not my friend, but a double, a twin," etc. Thus, the result is that if we are to preserve likeness we must retain the way of arranging the hair, however much it may strike us as unbecoming, unsuitable, etc., if it is the way in which the hair is usually worn. So that it works out to this sum-total: All that we can do is posing and lighting of the head and hair as presented to us. This is the case with the hands also. Our next point is to observe that certain styles of hair produce certain marked effects on the general appearance—*i.e.*, shape of head, apart from expression.

To illustrate a few of these points, we have induced the same sitter to arrange her hair first in one way and then in an other. We have merely altered the point of view so as to try and bring out or show the way in which the altered hair arrangement affects general shape. In all cases a somewhat vague and indefinite style of lighting has been employed so as to eliminate this factor as far as possible.

In Fig. 1 we see my sitter with hair arranged in her usual style. A nearly side view is chosen so as to better convey at starting a good general idea of the shape of the head. This view should in all cases form, as it were, our measuring standard—that is to say, we should ask ourselves this question in each instance: Suppose I knew the sitter, as shown in Fig. 1, should I at once recognize each of the other "presentings" as equally good likenesses of her? If not, why not?

Illustrating "The Hair in Portraiture."
By C. C. Kough, Greensburg, Pa.

In Fig. 2 we have the hair more or less flat at the top and generally drawn out in what we may call the horizontal lines. There is also somewhat of a projection of hair at the back of the head. By selecting a profile view we draw attention to the horizontal influence. Thus the general impression is that of a horizontal oval; thus, ⬭, like the letter O laid on its side.

In Fig. 3 the hair is still kept flat at the top, but is drawn down more in a vertical than horizontal direction. A three-quarter view brings these lines into prominence. Thus, the forehead is not long, square-looking, but curved and narrowed toward the top. And briefly we may say that the general effect is vertical length rather than breadth. For example, in Fig. 2 the distance from tip of nose to back of ear seems abnormal. But in Fig. 3, though we do not see the ear, we know where it is, and this impression of great distance is now reduced to one of quite average proportion. This head reminds us of the letter *O* tilted slightly backward. At first glance it is not easy to recognize Figs. 2 and 3 as being the same person—same dress, lighting, etc.—the only difference being the arranging of the hair and a slight change of position of the head.

Illustrating "The Hair in Portraiture." Copyright, 1899, by Schloss, New York.

Passing to Fig. 4, we see the hair piled up on the top of the head and drawn away from the sides. This has what one might call a general upward influence, and the total general result seems to be that of making the face and head look long and narrow. Contrast this with Figs. 2 and 3, and the marked difference will be seen at once. In this case one seems to imagine that the head is top-heavy. Here the forehead is oval in general shape and outline, thus again differing from Figs. 2 and 3. The distance from nose to ear is reduced. Thus the vertical ().

Our next illustration, Fig. 5, is again quite different in style from all the foregoing. Here the hair is more or less evenly distributed about the head without any specially marked tendency. But part is brought forward so as to cover one side of the forehead. Note how this arrangement seems to give roundness to the face and head generally. The hair, though not parted on one side, is yet distributed unevenly, so that there is more on one side than on the other. This gives a somewhat thoughtful aspect to the face. The general idea of a more or less square forehead is suggested. The proportions of the head are far better balanced than in Fig. 4. Our last illustration, Fig. 6, is an easy step from the last one. The hair is parted in the middle and easily distributed toward the sides of the head, but kept flat on top. This in general tends to broaden the lower part of the face and convey a suggestion of roundness.

Contrasting this with Fig. 4, we see in one the vertical and in the other the hori-

zontal elongations suggested ; yet the viewpoint in Figs. 4, 5, and 6 is practically the same. This conveys a general impression of easy-going good nature.

But the reader naturally is wondering what has all this got to do with portrait photography, and mentally saying or asking: "Is it not entirely a question for the sitter and her hair-dresser?"

Nevertheless, the photographer comes in right here, all the same. Being an observant man, he will among many other things note the style of hair arrangement chosen. He will ask himself, "Why does my sitter select this style? Is it to make her head look large, small, long, broad, high or low forehead, learned, or pleasing?" etc.

If he is working to please his customer only, he will pose and light the head and face in such a way as to bring out those features and characteristics which the sitter silently says by her hair arrangements that she or he thinks of chief importance.

But if he is working to please himself, and wishes to make what he thinks the most pleasing or the most characteristic portrait, then he will emphasize or subdue this or that effect, as it seemeth best to him so to do. Thus, the front view of Fig. 4 is long and narrow, but a profile would greatly reduce the effect. The case of Fig. 2 is exactly *vice versa*.

Again, in the case of Fig. 5 or 6, where we have a somewhat round-face influence. This we may wish to subdue. This can be done by a strong side lighting, which puts one-half the face into strong shadow—an obvious advantage.

AN AMERICAN PHOTOGRAPHER IN SWEDEN.

NEW ENGLAND photographers who remember Mr. Ferdinand Flodin, who some few years ago occupied a studio at Worcester, Massachussetts, will doubtless be interested in the views here presented showing the Flodin Studio at Stockholm, Sweden.

Mr. Ferdinand Flodin enjoyed a high reputation in this country, both as portraitist and business man, and, as our engravings show, he thoroughly sustains his reputation in the new location.

His studio is well placed on one of the most desirable thoroughfares of Stockholm and, since beginning business therein, Mr. Ferdinand Flodin has built up a large and flourishing patronage.

We are pleased to be able to give these glimpses at his work and work-rooms and to commend his enterprise.

An Eager Student. By Ferdinand Flodin.

The Reception-room. Flodin Studio, Stockholm.

Two views of the Flodin Studio, Stockholm.

PRINTING BY ELECTRIC LIGHT.

At a recent meeting of the Franklin Institute, Philadelphia, Frank A. Brunner gave a successful demonstration of the operation of an improved photographic printing machine, which, it is claimed, has solved the problem of the rapid and inexpensive reproductions from negatives independent of weather conditions. The apparatus is designed to make use of the various slow printing papers used by professional photographers. Heretofore, the cost of reproduction by artificial light has been too great to admit of general adoption, but with the new apparatus the method of photographic printing bids fair to be revolutionized.

The machine is octagonal in form, and takes up a floor space 3 x 3 feet. Only one arc lamp is required to print eight negatives 11 x 14 inches, or a greater number of smaller ones, one lamp being placed in each machine. The machine exhibited turned out prints 5 x 7 at the rate of ninety per hour, which would mean from 800 to 900 prints in a working day of from nine to ten hours.

A corner of the Flodin Studio.

Contrasts. By F. Flodin.

The arc lamp is of special design, producing a light of a bluish cast, which is rich in actinic value.

"It is a well-known fact," said Mr. Brunner, "that the actinic rays of light are blue, indigo, violet, and ultra-violet. These rays are present in the rays of the sun, but the ultra-violet rays are lost to a great extent in passing through the earth's atmosphere. It is apparent that a properly constructed arc lamp is more efficient than even the sunlight, inasmuch as the actinic rays can be obtained in abundance by a suitable construction of the lamp. By actual experiment it has been proved that the machine will print any of the printing out papers in one-half the time required by a bright sunlight. By the con-

struction of the machine the rays of light are thoroughly diffused, the plates deflect, and the cylinder shape of the frame reflects the light at a multitude of angles, giving perfect diffusion all over the plate."

Speaking of its commercial value, the inventor said that by its use the photographer could tell just the amount of work he could do in a given time, independent of the sun.

PHOTOGRAPHS UPON WATCH CAPS, LIDS, AND DIALS, IN SILVER AND CARBON.

Practical Instructions with Working Formulæ.

(Continued from page 138.)

BY A. J. JARMAN.

In my last article I described the preparation of the emulsion, and the cutting of the sensitized paper. We can now take up the negative and printing. For this class of work we need clean, brilliant negatives. If these are made especially for this method I would suggest the use of a slow plate, as the negative should be strong in contrasts. Such a negative under ordinary conditions would give a hard print, but it is just what we need for watch-case work, the yellow or yellowish-red gold base showing the image to best advantage.

The negative need not be larger than two inches square. Having obtained a suitable negative of, say, a miniature for a watch-dial portrait, take a piece of orange or black paper the size of the negative, cut a hole in the centre, round or oval in shape, and attach this matt to the front of the negative, *i. e.*, on the glass, not the film side. This opening should be slightly smaller in size than the actual oval shape required for the portrait, the thickness of the glass of the negative being sufficient to produce a slight vignetting effect on the print. Now fix the miniature negative upon a piece of glass, say four by five inches, by means of strips of gummed paper. Cut a piece of the sensitized emulsion paper about one inch long and wide enough to completely cover the width of the oval in the negative. Attach the bottom end of this strip of sensitized paper to the negative by means of a small piece of gummed paper. This will not only hold the sensitized paper in position during printing, but will also give a hinge enabling us to turn the paper back for examination during printing, and return the print in perfect register for the completion of the printing. The print for our purpose should be about two shades deeper than is desired in the finished picture. When the print has reached the desired depth it is toned as usual, except that for this purpose gold toning and not platinum toning must be employed.

Cut the print out with a slight white margin around the oval image, taking care that the fingers do not touch the surface, and allow a strip of the print to form a tail piece by which it can be handled. Wash the print in several changes of clear cold water, allowing it to soak a few minutes between each change of water; then proceed to tone in the following bath:

Saturated Solution of Borax .	1 ounce.
Solution of Chloride of Gold (1 gr. gold chlor. to 1 oz. water) .	1 drachm.
Water	4 ounces.

The toning should be completed in four or five minutes. The print should be removed by gripping the tail piece with a pair of tweezers. After carefully washing the print in cold water, fix in a solution of

Hyposulphite of Soda . .	1½ ounces.
Water	10 "

The print will be fixed in five minutes, after which it should be washed in a stream of running water for five or ten minutes. In washing cover the dish with a piece of clean glass, allowing the water to run in at one end, the rest of the tray being carefully

covered. This will prevent the print from being washed away.

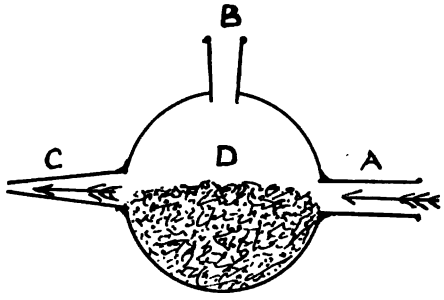
The watch-dial should now be carefully cleaned with a tuft of absorbent cotton, having been previously removed from the watch. If the figures or letters indicating the hours are in the way, their lower ends can be easily removed by cutting a strip of wood to a neat point, dipping it into hydrofluoric acid, and gently rubbing the portions to be removed with the pointed stick. The dial is then dipped in cold water and the surface wiped clean, so that there shall be no pieces of fibre adhering to the dial. Now take a small basin of warm water about 120° to 150° Fahr. (which temperature should not be exceeded); in this immerse the print, and in the course of a minute or two the collodion film bearing the miniature image will float from its paper base. If not it may be assisted by the use of a small sable brush. Next immerse the dial in the warm water under the floating film, and carefully guide the film with its image to the spot required with the brush. Lift the two very carefully from the water (the film adhering to the dial), and locate the film precisely where it is wanted on the dial. Very carefully with the tip of the tongue press the film down in all directions from the centre of the image. Wipe away any superfluous material, such as traces of film, by the careful use of the brush, and stand the picture aside to dry away from dust.

When quite dry coat the whole dial over with a coating of albaline which has been thinned down with one-third of "thinner." The coating solution should consist of one-half albaline and one-half "thinner."* When the dial has been coated with this solution wipe off the lower edge with a piece of absorbent blotter, and stand it aside in a warm drying closet perfectly free from dust. When dry, not a trace of the varnish can be observed. There should be no trace whatever of discoloration, and the film is now quite water-proof.

If the transfer is to be made upon a gold cap or lid, these should be removed from the watch beforehand, and allowed to soak for a quarter of an hour in a tepid solution of potash lye, which may be kept in an earthenware dish for the purpose. Articles of this kind should be handled with great care, a pair of tweezers, the tops of which have been wound over with sewing cotton, being very suitable. This precaution is necessary to prevent the scratching of the highly polished surface. After immersion in the lye wipe the cap well with a brush made by pressing a tuft of absorbent cotton into the end of a piece of vulcanized or India-rubber tube about four inches long. The use of this brush will not injure the most highly polished surface in any degree. If the case or article is perfectly clean the water will rest upon it evenly. If it is not, the water will run in streaks. In the latter event the case must again be cleansed in the lye until the water will lie evenly all over the surface. This cleansing process is very important and not as easy as it reads. By practising on dummy gilded watch-caps, such as may be bought for about twenty-five cents apiece from dealers in watchmakers' materials, the necessary skill can be readily obtained. This method of transfer is, of course, upon a bright surface, which in many cases is very effective. The majority of watch-case photographs, however, are produced upon matted surfaces. The production of a matt surface on a watch-cap or lid is not a difficult matter, but requires care in the manipulation. It is carried out in the following manner: A pair of bellows will be required, which can be worked by foot power. The bellows best suited to the work are those used in blow-pipe work for the brazing of jewelry. Procure a copper ball from any dealer in plumbers' supplies; make a hole in each side of the ball so that the one will be directly opposite the other, and a third hole at the top of the ball. Solder a cone-shaped tube in the top, about one inch in diameter. At the sides solder at one hole a brass tube four inches long and five-eighths of an inch in diameter; at the opposite hole solder a brass or copper cone about three inches long, tapering from five-eighths of an inch to a quarter of an inch orifice. (See accompanying diagram.) Wash this piece of apparatus well in hot water and dry thoroughly. When dry put in half a pound of fine pumice powder through the top

* These can be obtained from dealers in artists' supplies.—EDITOR.

cone. Plug this up with a well-fitting cork. Attach the end of the straight brass tube to one end of a piece of India-rubber tubing about four feet long, the other end being attached to the bellows.



Having wiped the watch-cap to be matted, clean it with a piece of soft chamois-leather, take it in the left hand, hold the copper ball charged with pumice powder in the right hand, and work the bellows with the right foot. The pressure of air passing through the copper ball will carry a portion of the pumice powder with it, which, when blown directly upon the watch-cap or lid, has the same action as a sand blast. In this way, by moving the cap around so as to receive the air blast and pumice, the whole surface will become beautifully matted. The copper ball should be occasionally shaken by the right hand to shake up the pumice. Anyone exercising a little dexterity will quickly become proficient in this process of matting. When the matted surface has been produced the watch-cap or lid should be cleansed in the lye as already related, well washed, the collodion film stripped from its paper base, and transferred in exactly the same way as already described for the watch-dial picture. When dry the cap or lid is given a coating of albaline as already detailed. If any spotting is required on the print this should be done before the picture is varnished. With care in manipulation this delicate operation will rarely be necessary.

(*To be concluded.*)

THE POLYCHROMATIC PLATE.*

BY JOHN CARBUTT.

In appearing before you this evening it is not my intention to give a historical or scientific description of orthochromatic photography, further than to mention the names of the pioneers, whose scientific investigation was the incentive to the more complete color sensitive plates now in common use, but to show you a few graphic illustrations by aid of the modern color sensitive plate.

Dr. Herman Vogel, in 1873, found that by the addition of certain yellow and red dies to collodion a better rendering of the green and yellows was obtained. Captain Waterhouse experimented on the same lines. In 1878-79, Mr. F. E. Ives improved on the Vogel and Waterhouse methods by the use of chlorophyll as a sensitizer. The late M. Carey Lea also made extensive experiments with certain chemical salts to produce color values. The color sensitive collodion, however, did not come into practical use by photographers; but on the advent of the more sensitive gelatine process, orthochromatic plates became a commercial article. In 1883 Tailfer and Clayton, of Paris, brought out a dry-plate color sensitized with eosine, and the same was introduced commercially in London by J. B. Edwards in 1884, under the name of isochromatic. Upon learning of this through the British photographic journals, I took up the study of the subject, and in 1886 commenced the manufacture of orthochromatic plates. Some two years since I commenced experimenting to produce a color sensitive plate that would be capable of taking all colors from blue to red of the spectrum, with a view of their being used not only by professional and amateur photographers in advanced lines of work, but especially for use by printers and publishers, reproducing works of art by the trichromatic printing process.

I propose, therefore, first to show you

* A paper read by Mr. Carbutt before the Photographic Society of Philadelphia, February 11th, with a lantern demonstration of the results obtainable by the use of his Polychromatic Plate.—EDITOR.

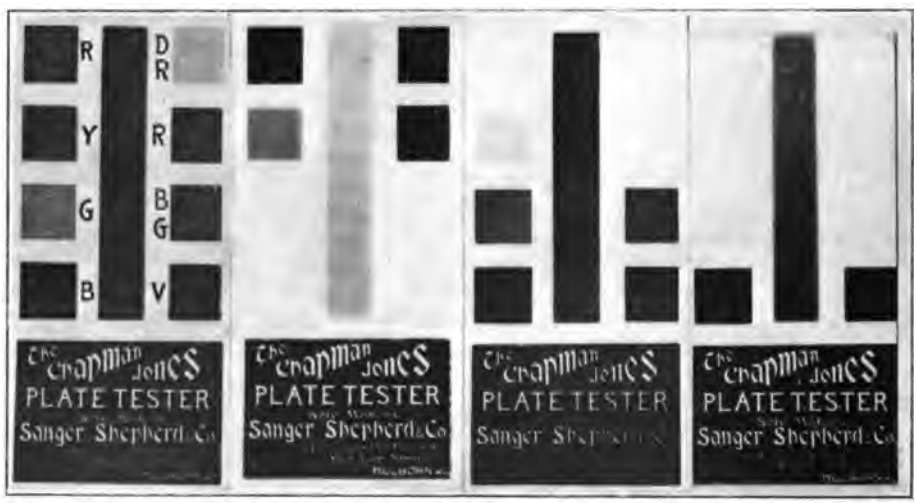
Spectrograph Illustrations Showing Sensitiveness of Polychromatic Plates to the Colors of the Spectrum.

FIG. 1.—Single exposure to Sun's Spectra of Polychromatic Plate.

FIG. 2.—Three alternate exposures to Sun's Spectra through Carbutt's Measured Light Filters. Ratio: Blue, 1½; Green, 4; Red, 6; and rendering the Clerk-Maxwell Color-Curves.

Four prints made with the Chapman-Jones Plate Tester, showing the value of the Polychromatic Plate in three-color work.

1 2 3 4



1. Normal exposure of 20 seconds 42 inches from 16 C. P. lamp, without light filter.
2. Exposure 12 times normal through red light filter, for blue printing plate.
3. Exposure 8 times normal through green light filter, for red printing plate.
4. Exposure 3 times normal through blue violet light filter, for yellow printing plate.

on the screen results obtained by the ordinary plain and orthochromatic plate before proceeding to describe our Polychromatic plate, which is sensitive to all colors of the spectrum.

I am sure I need not take up your time by endeavoring to impress on the members of the Photographic Society of Philadelphia the advantage which an orthochromatic over a plain plate gives you. While the regular ortho plate, which is normally sensitive to the green and yellow rays, can be developed by a light passing through a good ruby glass, the Polychromatic plate requires for its manipulation a light passing through a medium that only transmits the extreme red end of the spectrum. I had, therefore, to produce what I call a Safe Light, which I have brought for your inspection, and also a set of Light Filters, used in obtaining the three-color value negatives.

I will now have shown on the screen negatives made with the Chapman-Jones plate tester, consisting of slow and rapid plate, ortho plate with and without Light Filter, transparencies from ortho films and plates, transparencies from Polychromatic plate without Light Filter, negatives on Polychromatic plates with and without Light Filters, showing their use in producing the three-color value negatives for trichromatic printing, together with the Chapman-Jones plate tester, and finally two sun spectro negatives, one a single exposure and the other with three separate ratio exposures through our Polychromatic Light Filters, showing the blending together of spectro colors, giving the Clerk-Maxwell Color Curve.

Normal Exposure 20 Seconds, 42 Inches from 16 C. P. Lamp, when Using Eclipse or Polychromatic.

No. 1. Chapman-Jones Plate Tester.

No. 2. Lantern plate, ten times normal exposure or 200 seconds.

No. 3. Ortho 23, normal exposure.

No. 4. Polychromatic plate, normal exposure, without Light Filter; showing its sensitiveness to all the colors—blue, green, yellow and red.

No. 5. Plate specially sensitized for blue, green, and yellow, minus red. Red printing plate.

No. 6. Polychromatic plate, exposed ten times normal through red Light Filter, for blue printing plate.

No. 7. Plate specially sensitized for blue, green and yellow, exposed through blue Light Filter, for yellow printing plate.

Nos. 8, 9 and 10. Slides from ortho films with light yellow screen.

No. 11. Transparency from negatives on B. 16 plate. Subject: Coat, a bright scarlet, light blue sash, and dark gold trimmings.

No. 12. Same subject taken on a Polychromatic plate with red Light Filter.

No. 13. Group of dark red, pink-white and white pæonies. Polychromatic plate without Light Filter. Cover on stand Turkish embroidery.

No. 14. Mexican cactus; blossoms bright scarlet. Polychromatic plate, no Light Filter.

No. 15. Negative of sun spectro, no Light Filter.

No. 16. Negative of sun spectro, ratio exposure, through blue, green, and red Light Filters.

On another page we reproduce prints showing the Polychromatic plate to be sensitive to the full range of the spectrum, and a set of prints showing the uses of this plate in three-color photography.

Researches in Flashlight. Some valuable facts and figures are brought to light in a paper by M. Albert Londe before the French Photographic Society. A flashlight powder, ignited by electric fusion of a thin wire—which M. Londe finds to be the best method—reaches its maximum actinic power in $\frac{1}{50}$ of a second. This maximum lasts from five to six hundredths of a second. The eyes of a sitter remain open and natural in appearance for $\frac{1}{100}$ second, but at the end of $\frac{1}{15}$ second are completely closed. Hence the need of rapidly burning powder and the practical advantage of using powder freshly mixed and igniting it in separate small lots. Old powder was found to burn with one-fourth the speed of fresh, and while 15 grains of a certain mixture were consumed in $\frac{1}{8}$ second, 80 grains required $\frac{1}{6}$ of a second.

Wood, Water, and Sky. By L. Walker, Philadelphia.

OVERFLOW, FROM "VOIGTLÄNDER AND I."

BY JAMES F. RYDER.

In the early sixties, when we paid three dollars per ounce for nitrate of silver, I resorted to the following method for saving the waste:

I had sawed from a board, a foot square, a circular opening large enough to receive the crown of a soft-felt hat. I nailed four legs—one to each corner of the board, and pushed the hat in with the opening up, and placed it in the developing sink beside a cushion-covered box on which I washed my developed plates, leaving a full stream from the faucet to flow upon it.

This was in collodion days. Our developing solution was sulphate of iron and acetic acid held in a wide-mouth bottle at the right hand of the operator. The developing-room, unlike the present for dry plates, was sufficiently lighted to enable the operator to work with perfect freedom from danger of fogging his plates. No developing trays were employed. The plates came wet from the holders, wet from the silver solution which saturated the collodion film. The plate was held in the left hand, the thumb lapping over the lower left-hand corner, and the fingers on the under side of the plate, enabling the operator to hold it level. Now, with the developing bottle held upon the lower end of the plate, it was tilted sufficiently to flow the solution quickly over the surface. The solution of iron coming in contact with the nitrate of silver quickly reduced it to a metallic state.

The surface solution upon the plate was drained into the hat, which acting as a filter permitted the water to run through while the particles of silver were caught in the felt. When it happened that from undertiming, overtiming, moving of the sitter, a lack of perfect focus, streaks or spots from imperfect cleaning of the plate, the entire film was scraped off into the hat—a thin slab of hard rubber, such as is used for plate-holder slides, was employed for the purpose. These collodion skins were rich in silver, but to a person not

understanding their metallic value presented an uninteresting gray mass.

Little did I know in those times what reckless loss I was committing in future photographic productions—what fame I was losing in those scrapings—into the soft-felt hat. As the years passed over my head, changing it from a rugged covering to a bald pate, I have awakened to a realization that a genius of photographic possibilities has taken advantage of my sleep and established an "advanced school," and I am not in it. I see plainly enough I have not kept up with the times. The examples I have seen of the "new photography" in prominent magazines, in popular exhibitions, send me back to the felt-hat scrapings with a wail at my stupidity in failing to discover or claim a discovery.

In the innocence of my heart I admired clean work, distinct, soft, and clear. I even liked rich textures. I thought what seemed to me in the portrait of an old man with a sweeping white beard, with silken hair of flossy softness, where from a shadow of delicious depth a soft light went climbing hand-in-hand with a gentle shadow over cheek, nose, and forehead without a stumble; without flattening; without a loss of detail or losing any part—why, I thought it fine. The new school finds beauty in haze and smudge, in what would have seemed to me before I fell asleep a sloppy, scurvy photography. But perhaps I am prejudiced.

This additional chapter to Mr. Ryder's delightful book of reminiscences affords our readers a glimpse of the pleasures in its pages. The photographer who can enjoy a hearty laugh, as well as the man who feels that he does not know it all, should read *Voigtländer and I* from cover to cover. Postpaid, $2.50 from the office of this MAGAZINE.

A Country Road. By L. Walker, Philadelphia.

To determine between genuine platinum prints and bromide prints, mix 15 drops of a saturated solution of iodine in alcohol and 20 drops of a saturated solution of potassium cyanide (poison) in water. Apply a drop of this at the corner of the suspected print. If the print is a bromide print a white spot will result.

KEEPING SOLUTIONS.

BY PHILIP BEMROSE.

THE amount of loss from the deterioration of stock solutions must total up to a very considerable figure. Probably it is felt in but few studios, for the constant use of chemicals makes convenient a new mixing every few days. To the amateur, who does but occasional work, the loss is relatively greater, and, though the actual value of the spoiled solutions is not great, their spoiling is very exasperating.

Even in the most carefully-managed of dark rooms, or toning rooms, there is a certain amount of leakage in this direction, and in not a few businesses it pays to prevent more than a minimum. It is not sufficient to cork bottles. Corks do not always fit more than moderately well, and there is always a leakage of air through or around them. Why does the air so insidiously penetrate into places where it is not wanted? Surely there can be no current of air flowing into and out of a bottle. It is largely a question of temperature. During the day the bottles probably get warm and the air inside expands, and so forces a part of itself through the cork. When things cool off the air in the bottle contracts, and so more air percolates through the cork, carrying a fresh supply of oxygen to the solution; then as the solution lowers in the bottle from use the air-space in the bottle grows larger and larger, and every time the bottle is opened and poured from a new lot of air is admitted, until, to all practical intents, the bottle might as well be kept uncorked.

Where a stock solution is mixed in quantity sufficient to last for some time the easiest way of keeping it pure is to bottle it in a number of small bottles. Each one may then be sealed and remain secure until it is wanted. Fill the bottle with the solution, cork tightly, and then immerse the cork and bottle-neck in a dish of warm (melted) paraffin wax. This wax may be melted in any small pan, or ladle of iron or tin. The wax sets in an air-resisting film, perfectly protecting the contents of the bottle. Paraffin wax is particularly useful, as it not only coats, like common sealing-wax, but it also penetrates into the pores or cracks of the cork, effectually sealing them. It is therefore useful for corks which are not otherwise sealed, as it renders them impervious to air, except when used for varnishes or "driers," which dissolve the paraffin.

Where large quantities of solution are used a large bottle may be employed instead of a number of small ones. A hole at the side and near the bottom of the bottle allows the solution to be drawn off. This hole should be fitted with a perfectly air-tight cork, through which a glass tube passes, the tube being fitted with an India-rubber extension and a small tap. As the liquid is drawn off through this tube more air enters through the cork in the mouth of the bottle, and this air must have had its oxygen extracted. To rid the air of oxygen take a six or eight-ounce bottle, half fill it with broken glass (broken small), and cover the glass with a strong stock solution of pyro-soda. The cork of this bottle is well sealed into the neck, and through it two glass tubes are placed. One reaches down through the broken glass to the bottom of the bottle. This is to admit the air; the other just reaches through the cork, and is attached by a rubber tube to a similar glass tube in the cork of the big bottle. As stock solution is drawn off its place is automatically taken by air, which has passed through the pyro-soda. In this passage through all the oxygen is eliminated from it.

Some few solutions—the sulphocyanide and ferro- and ferri-cyanides—do not suffer from oxidization. That arch poison, potassium cyanide, no longer in universal use, should be protected by an air-filter of caustic soda instead of the pyro-soda developer.

Many solutions deteriorate under the action of *light*. This is obviated with some by their use in the dark room only; others, such as the varnishes, are used in daylight. It is well to keep all the bottles in a dark closet. Even with this precaution it is well to protect the bottle from light during use. A bottle of red glass is useful, but equally effective is to paste round the bottle a piece of brown wrapping-paper.

BRILLIANT NEGATIVES.

BY JAMES EPPS.

An amateur, a few days ago, brought me a number of exposed plates for development. I developed them, and in every case there was at least a trace of fog. A few were almost spoiled by fog. He was a reasonable creature, and accepted my suggestion that the fault was probably in himself or his camera. There are so many possible causes of fog, and it sometimes happens during development.

By brilliant negatives I mean those without fog; they may not have a scrap of clear glass in them—probably they will not, for clear glass is often a sign of underexposure.

Fog is a matter of degree. Theoretically all plates, after exposure in a camera, are more or less fogged. The lens projects an image on the plate, but its circle of illumination is larger than the plate, and the edges of the bellows, or the sides of the rigid camera, catch the light. The creamy plate, too, reflects light into the camera, adding to the illumination of the sides. Indeed, the camera is anything but a strictly dark chamber during exposure. We keep this fog down to a negligible minimum by keeping the inside of the camera clean—this also helps us to keep clear of pinholes—and keeping it a dead black. For some very bright subjects a lens shade is a further precaution. To a certain extent a hat or the focusing cloth held above the lens, and just out of its field during exposure, is a remedy. The best hood is a rectangular one of dimensions proportionate to the plate, lined with black velvet, and of such a size that it does not at all impinge into the field of the plate, but cuts off those outer portions of the circle of illumination which normally fall on the sides of the camera.

A general fog sometimes covers a plate which has been kept too long—or, rather, which has been improperly stored. The remedy is to use fairly new plates and to keep plates stored in a dry, cool place, and with the boxes standing on their sides.

Plates may fog during development. The developer after a certain time becomes merely a reducer and attacks the remaining silver indiscriminately all over its surface. This fogging is very likely to occur where plates have been underexposed. They are forced to bring up the detail which is not there, and instead they yield fog. The prevention is to give a sufficient exposure, whenever possible, or to use a weaker or more restrained developer than normal. In this connection it is worth noting that those developers which "flash up" all the detail in a few moments—such as metol or rodinal—are more liable to give fog than are the developers which slowly yield detail as they build up density.

If a plate fogs in development the photographer usually recognizes it and can accuse himself. But if he cannot imagine where the trouble is it is usually some extraneous light which has reached the plate. The dark room may leak, or the lamp be unsafe; or it may be some defect in the camera or the plate-holder. If all these possible sources are made secure the chances are that the fog difficulty will be over.

STUDIO NOTES AND JOTTINGS.

BY PROFESSIONAL, IN "PHOTOGRAPHY."

Photography as a Business.

It is an old saying that every man is confident that he can do three things better than his fellows—to wit, edit a paper, judge a horse, and manage a woman. To these assumed capacities I would add the running of a photographic business. It is not necessary to move in a wide circle of photographic friends, nor to associate with all classes of photographers, to become aware of the fact that many an owner of a camera aspires sooner or later to become the owner of a photographic business. The

photographic profession exercises over the minds of many people a subtle fascination similar to that which draws others to the literary, artistic, and dramatic professions. Fortune may have placed these victims of the "camera fever" in excellent positions in some lucrative occupation, far better than anything photography has to offer, yet they forsake all, under the false impression that nature has endowed them with gifts that can only be utilized properly in a photographic studio. In a few instances, perhaps, this call to photography may prove a success; in the majority of cases it ends in disaster. Experience shows that the successful photographer is a result of special aptitude, combined with a long business training. In a good many instances he comes of a photographic family. Skill in professional photography appears to be hereditary; from my own observation I can vouch for several cases of the sons of professional photographers having a natural gift for the work. In general, it is such men as these who are at the top of the profession. They do not suffer from the "camera fever." Often enough they dislike photography; but they possess the knowledge of what is good work and the power to achieve it.

Paying for Ideas.

Several manufacturing firms both in this country and abroad have made it a rule that any of their workmen may suggest to the management a new method of working or an improvement in machinery, which if adopted will be paid for according to its value. By this means the workman is encouraged to interest himself in his work, thereby becoming a more valuable assistant and increasing the amount of his output. In the conduct of photographic operations there is still room for improvement, and employers might possibly receive valuable hints from assistants concerning the more economical working of studio or printing-room. Printing is still in a backward state, the methods of forty years ago being practised almost unchanged. Both technically and economically there is room for improvement, which might be accomplished if assistants were encouraged to make suggestions. Many photographic assistants possess an idea for a new process, piece of apparatus, or system of working; and in some cases this is freely put into practice in their daily work. The discovery of such novel ideas is not pursued by photographic employers, and it would be well if the offer of payment should make assistants disclose them to the mutual benefit.

Shop-Window Photographs.

Photographs of shop windows taken by daylight are not always satisfactory on account of the reflections from the plate glass and from mirrors and other polished objects in the window itself. To overcome these reflections it has been suggested that windows should be photographed at night-time when illuminated by artificial lights. With the old style of gaslight this would have been impossible; but now that the electric light, incandescent gaslights, and other illuminants of greater actinic power are used in shops it becomes quite practicable. Few professional photographers have so far taken advantage of the means of obtaining shop windows and interiors, and as the results are so highly successful it might be more generally adopted. The method has advanced beyond the experimental stage, for Mr. C. C. Borup, of Herne Hill, has been practising it for some time, having made such work a feature of his business. A recent issue of the *Journal of Gas Lighting* contained three examples of his night photographs, showing what can be done when gas alone is the illuminant. The pictures are all fully exposed, the detail being also well rendered. One, an interior, contains five figures, and as these are fairly sharp the exposure could not have been very prolonged. According to Mr. Borup, under the usual conditions of lighting the exposure varies from one minute upward. He uses isochromatic and backed plates and a first-class landscape lens. The negatives are reduced locally if necessry. For good photographs of shops and shop windows there is undoubtedly a large demand which photographers might supply by giving attention to making pictures by gaslight.

The Sitter vs. the Operator.

I have oftentimes heard it remarked, when the comparative merits of the portraiture by different workers has been under

discussion, "Yes, B.'s work is first-class, but then look at his sitters; they photograph themselves, and anybody could make pictures of them." There is no doubt some truth in the opinions here expressed, which imply that the more promising material can be made to yield the more attractive portrait, yet it is not the whole truth. The sitter is, of course, either of the difficult or easy type, but I am confident that the pictorial quality of a photograph is made by the operator. That this is so may be readily proved by comparing the portraits of some acknowledged ideal sitter from various studios. How widely they will differ; how manifest it will be from the best of them that the sitter was all that could be desired; how painfully evident from others that the model was poor, and would never make a successful photograph! The man behind the camera had made all the difference. In some cases he had brought out the best qualities of his sitter; in others he had quite failed to see and utilize what would have given refinement and merit to his production. Some photographers, judged by their work, seem to possess a monopoly of perfect sitters, and to my mind the only possible explanation is that they elevate their subjects by means of artistic talent. They seize on the pictorial qualities of every sitter, thus giving their productions a superior and special merit, which at a first glance appears to be a possession of the sitter. To create this impression is the art of perfect portraiture.

Professionals and Exhibitions.

In view of what was put forward editorially in a leader a few weeks back I should like to add my quota to the advice then given. Between November and May the leading photographic societies are holding their exhibitions, and so bringing before the public the results of the previous year's work. These exhibitions form an admirable means of judging the position of pictorial photography and of noting if any progress has been made, either in processes or in artistic treatment. In many towns it is the only opportunity the public have of becoming acquainted with the best efforts of modern workers. In the main, the annual local exhibitions are confined to amateurs, and it is the exception, rather than the rule, to see local professionals represented. From the point of view of the members of a society this exclusion of the profession seems entirely commendable, though it is doubtful if the public are of the same opinion. To the majority of persons the professional photographer alone represents photography, and they fail to understand an exhibition from which he is excluded. A few societies have put themselves in the position of the public with regard to their exhibitions, and have recognized that if they expect public support they must give the public exhibitions which appeal to the general understanding instead of to the photographer alone. It is obvious, I think, that if amateur and professional were to combine in organizing and supporting the annual local exhibition it would become a much more influential event, giving both amateur and professional an important standing in local affairs. To effect such a combination, I am aware that it requires some barriers to be broken down which divide amateur and professional, but when once these are removed it will be found that more is gained by combination than by antagonism between the amateur and professional sections.

The Color of Studio Walls.

The color of the interior walls of the studio will have a marked effect on the lighting of the sitter; and, in consequence, this color should be chosen to suit the available illumination. All surfaces reflect light in varying degrees, and can be arranged in order between the most reflective, such as white blotting-paper, and black velvet, the least reflective. The amount of white light per cent. reflected from some common substances is given in the following table from Dr. Sumpner:

White Blotting-paper	82 per cent.
Yellow Wall-paper	40 "
Red Paper	40 "
Blue Paper	25 "
Yellow-painted Wall (clean)	40 "
Yellow-painted Wall (dirty)	20 "
Plain Deal (clean)	50 "
Plain Deal (dirty)	20 "
Dark-brown Paper	13 "
Deep-chocolate Paper	4 "
Black Cloth	0.4 "

From this it is seen that a white surface will reflect 82 per cent. of the light

falling upon it. Thus, by its use as a reflector, the illumination in a studio can be almost doubled. A white surface is too highly reflective for studio purposes, it being more convenient to have the walls a medium color, obtaining high reflection, when necessary, by means of white screens. Red paper, it is seen, reflects 40 per cent. of ordinary light, while blue paper reflects but 25 per cent. The reflective power of the red paper, however, is mainly for the red rays, which it may reflect to the amount of 80 per cent., absorbing, perhaps, 90 per cent. of all other rays. A dark-blue paper may, therefore, reflect a higher percentage of actinic rays than a light red. The reflected light in a studio will thus tend to be of the same color as the walls. Reds, yellows, and all non-actinic colors, however light, should thus be avoided, the exposure and illumination being as well helped by dark blues without making the studio seem glaring.

Pictures or Portraits.

The fashion in portraiture has for some time past inclined toward what is known as the "picture portrait," this being a production in which fidelity of likeness is subordinated to considerations of artistic merit. As a thing of beauty, and apart from any question of likeness, the picture portrait is a great advance on the "usual thing"– that hard, material, commonplace style of portraiture which was for so long the mark of the professional. Happily, this purely scientific portraiture, that was nearly always a bare record of the features of a sitter, has given place to work of a more refined and artistic nature, which combines a faithful likeness with pictorial merit. So far professionals have not gone to extremes with the "picture portrait," and if anything their pictures are still truthful as likenesses. Among amateurs this hold on truth to nature is not so firm, they preferring to sink something of the individuality of their subjects should it be likely to mar a pictorial composition. These highly artistic photographs are much admired by persons who do not know the models, but are not always so favorably received when their dearest friends are the subjects. The fact is that in photographs of those they know well people require a characteristic and realistic likeness, and to secure this will sacrifice every art principle. Thus, it is not advisable for the professional photographer to suppress the personality of his subject, but rather to concentrate his efforts on obtaining a true likeness, which is at the same time pictorial. His policy is to steer a middle course between the "picture portrait" and the "usual thing."

Free Sittings.

There are certain abuses prevalent in photography which have existed for many years. These from time to time are brought to our notice, and after fruitless discussion sink again into obscurity, and continue for want of a remedy. One of these is what goes by the name of "free sittings," and is a business practice which cannot be described as anything but unfair competition. Against legitimate competition no business man can object, but he has a right to protest when competition takes the form of underselling, price cutting, or of trading on the ignorance of the public. A "free sitting"—meaning thereby that a person is to be photographed and given so many copies free of all charge—is only so in name, and not in fact. Common sense at once tells us no class of goods can be supplied for nothing, and therefore that the photographs, if not paid for directly, are paid for indirectly. The "free sitting" practitioner looks for his remuneration in one of two ways—either in the supply of extra copies or in the possession of valuable copyrights. The person approached with a view to a "free sitting" is not always able to discern the real facts of the case, and it is upon such ignorance that the trade flourishes. It is obvious that such a method of conducting business puts the straightforward professional in a precarious position, since it tends to take from him a legitimate profit, and lowers the accepted prices. The only remedy is to enlighten the public, and bring home to them the fact that "free sittings" are only a business trick to capture copyrights or force the sale of extra copies.

Assistants' Specimens.

Another grievance of long standing is the non-return of assistants' specimens.

sent to employers when applying for a situation; and so far, like the poor, it has been always with us. To an assistant the loss of his specimens is most serious, as it may mean an absolute inability to find employment. In general, the assistant has but one set of specimens, for it is not customary for employers to supply them without limit. Knowing this, an employer who deliberately purloined them would be guilty of a most despicable offence. Such wilful detention of specimens is, from my experience, extremely rare, and the complaints against employers arise mostly from carelessness and a want of system in both receiver and sender.

Investigation of several cases a few years ago revealed the fact that the offending employers were men of high standing, to whom the specimens were of no value, their return being a matter which had been overlooked or delayed in the press of business. In many cases of the non-return of specimens the assistants are themselves to blame. I have on several occasions had to deal with parcels of specimens, and every time have had great difficulty in keeping them in order, because some were not marked with the assistants' names and addresses. In consequence, when the outside wrapper was removed, there was nothing by which the owner could be identified if once his accompanying letter was misplaced. And letters sent with articles are very easily misplaced. Complaints of the non-return of specimens would soon cease if only assistants would write their names and addresses on every picture and enclose with them an addressed, stamped wrapper.

AT THE PHOTOGRAPHER'S RISK.

A GREAT deal of work, and profitable work, is done by many photographers entirely on speculation. There is a reasonable chance that the venture may turn out successfully, and they risk it. Taking one time with another, the event justifies their faith.

Such work, judiciously undertaken, should be a part of the turnout of every photographer who has dull times on his hands. It may be followed along many lines, and the success is largely dependent on the ability with which the photographer can foresee what will be subjects likely to be remunerative.

There is more work lying around for the enterprising photographer than many of us imagine. The extent of it was brought home to us somewhat forcibly a few years ago, when New York was invaded by a speculative photographer of little merit as a photographer, but of unbounded push and self-confidence. How he got his commissions we never satisfactorily discovered. When he did get them he often broke down. But from those which came off he managed to make a living. And New York is a field pretty thoroughly covered, as a newcomer often finds, to his cost.

One of the least risky of speculative lines is the photographing of groups. School work usually pays, and yet the quarters or half-dollars have to be got from parents by the children.

Societies, lodges, meetings of various kinds, are all of them likely subjects. Overdone, perhaps, some of them are, but there is always a certain proportion which may be profitably photographed. And as a mere advertisement it is useful to be known as a live man who does this work. All business tends to bring in more business.

A rather vexed question is that of giving sittings at the photographer's risk to individual members of some society or organization. Some people curse the idea of complimentary sittings root and branch; others follow the practice. It resolves itself into a matter of business—rather than one of morality. The plan has been abused at times; more than once by unscrupulous photographers, but it is worth consideration. We have in mind a photographer who obtained sittings from all the members of the several fire brigades of his city. The different portraits, cabinet size, were mounted in a large mount, oval and square-cornered cut-outs. A cabinet print was sent to each member in return for the sitting; the large mount, framed, was presented to the chief; and ten by twelve prints of it were sold for a dollar.

The venture a little more than cleared itself directly in orders for duplicate prints from the individual negatives and in sales of the ten by twelve print. Indirectly it was a useful advertisement. In other words, it pulled in other business.

A line which is quite remunerative to some photographers in large cities is flash-light work of banquets or other meetings held in the evenings. The special requirements for this branch of work are a suitable lens, a flash-light installation, and considerable hustle. Also arrangements must be made with the conveners of the meetings or with the proprietor of the hotel or other room. Such work is, with a little experience, quite under control. The range of the lens is exactly known, and the requisite charge of powder and exposure. The guests who are too loomingly near the camera will step farther back on request, the chairman will stand up, the bulb is pressed, "thank you gentlemen," and the first part is over. With large public meetings there is no arranging of the people, and a full charge of powder with a very brief exposure are necessary. After the exposure comes the need for hustle—vital to the success of the venture. The plate must be developed quickly, washed quickly, and alcohol dried or printed from wet. A bromide print is made, slipped into a stock frame kept ready, and before the company parts the print is passed round the table. Small cards stating the price, and with an order form printed on them, are placed beside each guest. Those who desire prints sign the form with name and address, leaving the orders on the table when they depart.

It is working without filling a direct order when the photographer prepares a special enlargement for his show-case; but he looks to be recouped by the orders which it will bring in from appreciative people. Most new lines are introduced on "spec," and without introducing new lines a photographer is little hardly to make his business grow.

Just what is suitable for any special case must be decided by the photographer himself. What creates keen interest in one place falls flat in the next; but in most cases where a photographer has dull time on his hands there is work ready which may have to be undertaken at risk, but which, properly undertaken, will prove profitable.

THE NATIONAL CONVENTION.

LETTERS FROM THE OFFICERS.

The National Convention will be held at Indianapolis, Ind., August 4th, 5th, 6th, and 7th, and you will miss the event of your life if you fail to be on hand. Many good things have been prepared for your benefit, and the leading workers of the profession will exhibit their finest work. Send in some of your work, that we may see the progress you have made during the last year.

You will be surprised by the completeness of the exhibition this year. Every foot of floor space has been taken by the manufacturers and dealers, who are going to make the finest display in their respective lines ever shown at a National Convention. The photographer, manufacturer, or dealer who is not represented at the *big National Convention* this year announces to the *world* that he is not keeping *pace* with the times. Are you keeping the pace?

Promises made about sending in an exhibit should be kept. *One* promise *fulfilled* is better than a thousand broken promises. Get in line and help to keep the pace. Fraternally yours,

GEO. G. HOLLOWAY,
Sec'y P. A. of A., Terre Haute, Ind.

Help! Help!

It is an established fact that every movement having for its object the elevation and betterment of the people, either as a class or in general, is conceived, organized, and fostered by a few enthusiastic individuals whose enthusiasm is born of an intense realization of present needs.

In every instance these individuals are the thinking people, and I would urgently

ask those members of the photographic fraternity who do not recognize in the conventions of the Photographic Association of America a need to the craft as a means of giving to its members all incalculable assistance otherwise unobtainable to stop with me for a moment and *think*.

Art, science, literature, and, in fact, all mental achievements are evolutionary, each generation adding to the structures builded by its predecessors. Were this not true, were each individual student compelled to start at the beginning and wrestle alone with first principles, the end of a long life's work would make but little progress.

This, my fellow-craftsmen, is, to a limited degree, your situation. No one man is capable of evolving within a goodly lifetime scarce a fractional part of the remarkable phases of pictorial photography that will be shown in the superb exhibit of work at our next convention. These, with the presentation of important, pertinent lectures by able and entertaining authorities, and a brilliant interchange of ideas are the plans of wide-awake, ambitious students of the art to provide you food for thought, a fund of information and a surcharge of enthusiasm that will last you through the year. The effect of this on your business cannot be other than most salutary; for were you to show me a man interested in his business to the point of real enthusiasm, it would almost certainly be one who was making it a financial success, for enthusiasm and success usually go together.

I have made no mention of the entertainment side of the affair aside from the pleasures of the Convention proper. I would briefly add that this feature of the Convention will be in the hands of those who are skilled in entertaining, and you will have an abundant chance to enjoy every moment of the time.

I therefore appeal to you, in the name of the craft, to come to our aid and *help* us in our commendable efforts to elevate the photographic art of America and to better the condition of the photographic fraternity, promising you that by thus *helping* us none will be more greatly *helped* than yourself. Yours,

J. E. GIFFIN,

Second Vice-President P. A. of A.

UNDER AND OVEREXPOSURE.

BY JOHN BARTLETT.

THERE is undoubtedly truth in the saying, "a fellow-feeling makes us wondrous kind," so far, at least, as photographic experience is concerned, for we all sympathize in the disappointment of those who fail from the one cause of improper exposure of plate. At the risk, therefore, of being laughed at for uttering a photographic truism, we would hint at the paramount importance of correct exposure. Notwithstanding the confidence some have in depending upon the so-called latitude of exposure, we are of the belief that this latitude is within very narrow limits.

There is demanded a correctness in estimating the time of exposure if any regard is had to the beauty or brilliancy of the result.

To the inexperienced eye the effect of a slight deviation from correct exposure may not be perceptible in the resulting negative, but to the trained eye a very slight excess of timing is apparent in the solarization of the high lights and the clouding over of the shadows, which become more or less emphasized in the print.

Correct exposure, therefore, should be the aim of the photographer, and we are inclined to think that this *desideratum* is attained only by exercise of judgment gained by experience; for one acquires, by observation of the varying effects of light upon a variety of subjects presented to the camera, a sort of photographic sense which serves him in future experience. There have appeared from time to time many ingenious attempts to reduce the time of exposure to rule. Instruments

* Read before the Photographic Section of the Franklin Institute, February 14th.

have been constructed and tables calculated to guide the inexperienced.

Far be it from us to speak disparagingly of any means promising to put exposure on a scientific basis, so as to reduce to exactitude our photographic work; but personally we, after trial, have found them wanting.

The conditions under which subjects must be photographed vary so considerably, not only as regards light and shade, but with the character of the subjects, that any attempt at calculation would involve the consideration of so many factors as to preclude any systematic arrangement, and would contribute rather to the confusion than to the edification of the novice.

A record of personal experience is of more value in training judgment than implicit reliance upon exposure-metres or tables. Nevertheless, it may be urged that judgment is liable to err, and mistakes may be even made by the experienced, which it may be desirable to counteract in development.

If the time has been correctly estimated and the development tempered thereto, anyone may work out the plate's salvation without fear or trembling; but when the personal equation of under or overexposure is taken into consideration, the evolution of the perfect negative becomes really a fine art, and foreknowledge and acquired skill are demanded if one looks for softness without smear, high lights distinct and well defined, and shadows full of detail going by imperceptible gradations into the lights.

How shall this knowledge of proper adjustment be acquired? By experience we have said, not by mere dosing with bromide of potassium, deluging with water or spurring with alkalies, nor by feeling one's way with the leading-strings of tentative development.

Some start out on the very cautious track; thus, not knowing the exposure, they say, Let us bring out the detail with weak pyro or eikonogen or other agent, and then pile it on afterward to build up by intensity.

Others say, Start with the minimum of alkali, and if undertiming is evident, then apply the increments of alkali. By both plans experience attains good results, and the votaries claim that their special method is the only practicable method of manipulation.

But "there will come a time some day" when your tentative method will be found wanting. To get good results, we ought to diagnose the plate's exposure and determine whether the case demands a direct method in development or a tentative method, and apply a special therapeutic.

We hardly appreciate the resources we have in our phalanx of modern developers. We know a good deal about their action, but take little advantage of their special agency, thinking that they may be used indiscriminately.

Pyro is still a faithful ally in many cases, especially for obtaining plucky, vigorous negatives with rich shadows; but when great detail is demanded and we are not sure that ample time for shadows has been given, it would be unwise to cling to it and try to force detail by excess of alkali when better results may safely and effectually be obtained by one of the other reducing agents like metol, for instance.

Suppose we wish to develop an exposure in which we have certain colors which unequally affect the sensitive film—that is, we desire to equalize the action of light impressed upon a plate not orthochromatic. It certainly would be unwise to employ a strong development, which would cause the rush of particles to the parts most acted upon by light, and give the negative the appearance of an undertimed plate. No. We should rather make use of a well-diluted developer in which the alkali was somewhat in excess of the reducing agent.

But how are we to treat an enforced short exposure? We must seek for a developer which shall work out all the detail which the light has impressed. For really we are of the belief that it is not so much the failure of the brief impact of light on the silver molecules to produce effect as it is the inability of the developing agent to marshal them to its calling. We believe that any, no matter how brief, action of light produces a molecular change, and it is only the want of a proper reducing agent to make the action of the light manifest. In other words, if we had suitable developer we might evolve an image made by

the briefest possible exposure. So it is by very short exposures we are apt to get very contrasty negatives if we are not exceedingly cautious in our methods of development. Where the action of the developer is slowed there is a more harmonious distribution of particles, and consequently a greater range in gradation of light and shade than could be obtained by a rapid development. Any agent, therefore, which is slow in its action recommends itself for short exposures. Glycin, an agent but little used simply on account of its tardiness in evolving the latent image, is preferable for undertimed plates.

The advantage of glycin over pyro and others is that with short exposures it gives less dense high lights and richer shadows —that is, its slow action equalizes the distribution of light and shade.

Various agents have been employed either as retarders, restrainers, or accelerators of the action of the developer in calling forth the latent image.

We are familiar with the use of potassium bromide as a corrective of overexposure. It is, indeed, a valuable accessory to development, but its injudicious use frequently results in the production of harsh, contrasty work, inharmonious in light and shade.

Citric acid has been suggested as a restrainer in place of potassium bromide. When the modern developers are used, it will be found that a 10 per cent. solution of the acid gives greater power of restraint and less contrasty effect than bromide, and, besides, not materially affecting the duration of time of development. Sugar, in the form of weak syrup, is also employed to restrain hasty action of the developer.

Among the accelerators of the action of the developer the writer has found iodine of especial advantage. A developer with iodine may be made as follows:

Water	3½ ounces.
Sodium Sulphite (granular) .	62 grains.
Hydroquinone . . .	15 "
Saturated Solution Sal Soda .	2½ drachms.
Bromide Potassium, 10 per cent.	10 drops.

To this solution is added three drops of iodine solution made with

Water	4½ drachms.
Iodide of Potassium . .	77 grains.
Iodine (scales) .	20 gr. in 8 oz. water.

This accelerates development of undertimed subjects in a remarkable degree, and the resulting color of the image is richer and more intense than without the use of iodine. The addition of iodine, even in slight excess above that recommended, is liable to cause fog and reduction of density.

Hypo has also been used as an accelerator (1-1000), very dilute, of course. In some cases it may be found beneficial, but the writer has not noted any special advantage from its use.

We have spoken of the advantage of slow development for undertimed plates and of the employment of diluted solutions. Indeed, some operators employ exceedingly diluted developing solutions for snapshot work in the form of what is called "tank development." The plates are placed vertically in a bath, and covered with a solution containing only a small quantity of developing agents—so small a quantity that it is necessary for the action to be continued a long time to produce good results. The writer has subjected plates very much undertimed to a developer so constituted that it required twelve hours to obtain satisfactory negatives. Pyrogallic acid seems to lend itself best to this mode of development, as it may be diluted to a great degree without losing its energy; its action is only slowed down. Of course, there is danger of encountering stain by prolonged exposure of film to pyro, and it is necessary to employ an increased amount of sodium sulphite in the bath. Edinol, one of the late additions to the list of developers, may also be greatly diluted without appreciable loss of energy. It must be used in connection with sulphite of soda, but there is less liability to stain than with pyro.

Of Interest to ——. According to the Raymond, Ill., *Independent*, "Plain persons of both sexes will be delighted to learn that remarkably softened effects are obtained in photographs where thin sheets of celluloid are interposed between the negative and the printing paper."

JULIUS C. STRAUSS vs. ALFRED STIEGLITZ.

FEW men in the photographic world are so widely known or so deservedly honored by their fellow-workers as Alfred Stieglitz, of New York, and Julius C. Strauss, of St. Louis. Each in his own way—ways diverse, but leading to the same goal—they have given long and honorable service to the advancement of photography in America. Each in his own field—fields obviously separate and apart—they are to-day sources of inspiration and encouragement to progressive photographers everywhere. Personally and editorially we honor them for their devotion to our art, and hold them both in high esteem for the splendid qualities they possess as men. It is with infinite regret, therefore, that we here give place to a misunderstanding which has arisen between them, a misunderstanding which, unfortunately, works injustice to Mr. Strauss and, in him, to the profession at large. The correspondence which follows speaks for itself.—Editor W. P. M.

ST. LOUIS, April 9, 1903.

TO THE EDITOR OF WILSON'S MAGAZINE.

MY DEAR SIR: In the first number of *Camera Work*, page 37, is a comment on "Pictorial Photography; The St. Louis Exposition," over the signature "Editor" (Alfred Stieglitz). In part this comment reads: "Pictorial photography having at last won recognition in recent European art exhibitions, the managers of the St. Louis Exposition have awakened to the fact that they could no longer ignore its claims, although, *until Mr. Caffin, the art critic and editor of the American section of The International Studio, took up the cudgels for the cause, the authorities in St. Louis seemed bent upon following the old, narrow path.* Nor were they entirely unjustified in their conservatism, in view of . . . . *the more than extravagant demands made by Mr. Julius C. Strauss,* . . . . *who presumed to act as spokesman for the photographic pictorialists,* . . . . . but his (Strauss's) connection with the modern pictorial movement *has hardly been such as to have given him the knowledge and experience necessary to impress the authorities with the history and consequent rights of photography as a fine art.*"

I have italicised the portions of this comment to which I take exception. My reasons for challenging the statements are: 1. The St. Louis Exposition authorities had decided upon allowing a salon exhibit in the Fine Arts Palace before Mr. Caffin's article appeared in *The International Studio.* 2. I did not *presume* to speak for photographic pictorialists or any other kind of camera workers, but *was one of a committee delegated* to secure recognition for photography as an art from our World's Fair officials. 3. That the demands made by our committee, designated by Mr. Stieglitz as *more than extravagant*, were not so considered by our exposition authorities, nor so regarded by the photographic organizations of the world. 4. That the reflections upon my personal *connection with the modern pictorial movement*, etc., were intended not only as a very severe blow at me, but at all professional and nearly all amateur photographers; and 5. That the Camera Club of New York city, of which Mr. Alfred Stieglitz was at that time a prominent member and leading spirit, favored all the demands made by the committee, of which I was chairman.

I wrote Mr. Stieglitz a letter covering these points, His reply in the current (April) number of *Camera Work*, on page 51, begs the question by saying that in his previous editorial comment he referred only to "photographic *pictorialists*" (the *italics* are his), and he calls attention to the "distinction between such and photographers generally." In other words, it would seem that the display at the St. Louis Universal Exposition, according to Messrs. Caffin and Stieglitz, should be confined to the work of "photographic *pictorialists*," and they themselves should be the judges to decide which of their own productions should be displayed.

If you, Mr. Editor, feel that the professional and amateur photographers of the world not included in Mr. Stieglitz's roster of "pictorialists" have any claims upon the attention of the public, it would be well for your journal to take up the cudgel in their behalf.

In order that you may judge of the merits or demerits of my letter to Mr. Stieglitz, I enclose a copy of same. Very cordially yours,

J. C. STRAUSS.

(Copy of Letter.)

TO THE EDITOR OF "CAMERA WORK."

DEAR SIR: I am in receipt of a copy, as a subscriber, of the first issue of *Camera Work.* I am greatly surprised that in republishing the articles with reference to photography at the World's Fair, to be held in St. Louis, you found it necessary to go out of your way that you might make personal allusions which grossly misrepresent me. Your editorial comments evidence complete unfamiliarity with the history of the movement for the recognition of photography by the Exposition; consequently your statements are wholly erroneous.

The facts to which I will call your attention are easily verified by official documents in my possession. These are open to the inspection of any one interested in this subject. All the correspondence (excepting the suggestion to President Francis made as far back as July, 1902) between the World's Fair authorities and myself was in my capacity as chairman of the committee appointed by the then President of the P. A. of A., E. B. Core, of New York city. This committee was named by him at the National Convention of the Photographers' Association of America, held in Detroit in the early part of August, 1901. I was not present at any session of that convention and had no influence on its actions. That body unanimously approved the idea of a separate pavilion for pictorial photography possessing art merits. Mr. S. L. Stein, of Milwaukee, and Mr. C. M. Hayes, of Detroit, were the other members of the committee. We were instructed to use every effort to secure recognition for photography from the directors of the St. Louis Exposition. Not until some months later (in January, 1902) was Colonel Ockerson appointed chief of the Department of Liberal Arts. When he, in February, 1902, took up the subject of photography

he was not familiar with the correspondence between our committee and the committee on Fine Arts of the Exposition.

Aside from this action by the most representative body of American professional photographers our committee was accorded the active support of equally important bodies of non-professional photographers. I will refer to these more in detail presently. I mention the fact at this time merely to demonstrate to you that the charge made in your editorial comment, that I "*presumed* to act as spokesman for photographic pictorialists," is a gross misstatement—one that should not have found space in the columns of *Camera Work*, but, having been published, will be corrected, if you are governed by a sense of justice.

I will call your attention first to a letter from the Camera Club of New York city. I believe at the time this was written you honored that society with your membership. Under date of October 1, 1901, I was advised "that the Camera Club of New York city is heartily in accord with the plan of having built a proper building in which to exhibit photographs, so as to separate pictorial photography," etc. This letter is officially signed by the president. Next I quote from the letters under dates, respectively, November 12, 1901, and January 31, 1902, from the secretary, Dr. Bartlett, of the photographic section of the American Institute of the city of New York. In them it was officially declared that the committee "were unanimously in favor of the erection of a suitable building for the express purpose of a display of art photography." Again, I have a letter from the president and the secretary of the Photographic Society of Philadelphia, dated October 16, 1901, in which these officials were "empowered to inform you that the society regards your suggestion with favor, and desires to know in what way this society may be of service in the matter." Further, I have a letter dated October 14, 1901, from the California Camera Club Its Board of Directors "heartily endorses the plan, and promises its aid in every possible way toward the practical culmination of the 'idea.'"

From among a number of letters written by the officials of foreign photographic societies I select one by the Honorable Secretary of the Royal Photographic Society. This was dated London, January 15, 1902: "I am instructed to inform you that your scheme (a separate pavilion) has the entire sympathy and approval of my council, and they hope that it will meet with the success it undoubtedly deserves If you think we can assist you on any point connected with its organization, please command us." I will call your attention to an extract from a letter from Charles MacDonald, Secretary of the Glasgow Photographic Association, under date Glasgow, November 15, 1901: "I am pleased to see that you have hopes of getting the St. Louis World's Fair to allocate a separate section for Pictorial Photography on the lines indicated." Returning again to our own country, in April, 1902, the Chicago Society of Amateur Photographers unanimously adopted a preamble and set of resolutions containing, among other expressions: "Heartily endorses the demand of advanced photographers all over the world, and the demand voiced by Mr. J. C. Strauss," etc.

I have quite a number of other communications, but these will suffice for the present. These expressions, coming from the most representative photographic organizations of the world, demonstrate conclusively the injustice of your statement that I presumed to obtrude my individual opinion upon the officials of the World's Fair. I doubt whether it would have been possible to have received such unanimous and cordial support from the photographers of the world, amateur or professional, for any other project connected with photography. I feel that you must admit our committee did no more than voice the wishes of the representative bodies devoted to camera work.

I have the assurance of the chairman of the Committee on Fine Arts of our World's Fair that he and his colleagues were in favor of a separate building. The idea was rejected by the executive body because of the cost of an appropriate building. By the spring of 1902 our committee took the stand that as a separate pavilion could not be secured we would demand space for a salon exhibit in the Fine Arts Palace. If we failed in securing this no further effort to have a representative exhibit of advanced photography at the exposition would be made.

As to Mr Caffin, in all probability he never would have learned of the controversy between our exposition authorities and our committee but through my action in sending him copies of a few letters between Colonel Ockerson and myself as chairman. Mr. Caffin makes acknowledgment of this in the opening sentence of his first article. He knew nothing whatever of the many letters which had come from photographic organizations from almost every part of the globe. He knew nothing of the correspondence with the officials of the fair during the previous year.

By the time *The International Studio* for June, 1902, containing Mr. Caffin's first article, reached Colonel Ockerson official circular No. 5, relating to the allotment of space in the Fine Arts Palace, had already been determined upon; so that, while Mr. Caffin's support was welcomed and sincerely appreciated, it was to some extent *post festum* in accomplishing results.

Whether or not my connection with "the modern pictorial movement," or my "knowledge and experience with the history and consequent rights of photography as a fine art" is all that it should be, I believe it was pretty thoroughly demonstrated that those who you will concede had the advantage of connection, knowledge, and experience were quite well satisfied with the results obtained by my colleagues and myself. Did it not require too much time and space I would find much pleasure in quoting the words of commendation and appreciation which came to me from many parts of the photographic world upon the publication of the decision recognizing photography as an art. I will, however, ask you to grant space, so that I may give expression to some of my personal feelings and convictions with reference to the comparative worth of professional and amateur photographers.

Though belonging to the former class, I am not so narrow in my opinions, nor so prejndiced against the non-professional, that I am unable to recognize merit in photographic portraiture, by whomever made. I have always contended, and have frequently given public expression to these convictions, that many of the most important movements in the realms of art by photography have been led by amateurs. In all our conferences with Colonel Ockerson and others connected with the St. Louis Exposition we impressed upon them the absolute necessity of securing the support of the advanced amateurs. We made the fight for the recognition of photography as an art largely in the interest of the non-professional workers. My colleague, Mr. Stein, like myself, a professional, said to Colonel Ockerson: "Out of every ten pictures accepted for display we know eight will be made by amateurs." We were not speaking for professionals only. Had we been we would not have excluded ourselves from the jury of selection. Our whole contention for an exhibit along salon lines, to be passed upon by a jury of artists, was with the idea of barring the stereotyped, conventional photograph. I

was opposed to photographers as judges, by whom chemical effects and technical knowledge might be considered above true pictorial qualities.

I am aware that you have appeared in some journals in opposition to the appointment of artists (painters) on juries of selection. At the recent Turin Exhibition the participation of artists was most satisfactory, and it seems to me this plan of judging might be equally satisfactory in St. Louis in 1904.

From the very first, throughout the long struggle for recognition by the St. Louis Fair, not one word of mine, written or spoken, had in it an iota of personal or selfish interest. My whole aim and purpose was to assist, if possible, in the uplifting of photographers to the level with those who use other media of artistic expression in recording beauty of face or form or of view.

It would have been impossible for you to have misrepresented me more greatly or more undeservedly than in the unjust accusations and imputations condensed in the few lines devoted to me. I repel the assertion that I *presumed* to act as spokesman, and resent the statement that I was unsupported in the demands made. Now that your attention has been called to the misstatements and misrepresentations, I expect you to make proper acknowledgment in a manner equally as prominent as was your editorial in the *Camera Work* for January.

(Signed) J. C. STRAUSS.

The text of the reply to Mr. Strauss, as given in *Camera Work*, April, page 51, is as follows:

Re St. Louis.

"Our editorial in the preceding number, introducing Mr. Caffin's *International Studio* articles upon Pictorial Photography at the St. Louis Exposition, seems seriously to have hurt the feelings of Mr. J. C. Strauss, of St. Louis, in that we questioned the right of this gentleman 'to act as spokesman for the photographic *pictorialists*.' This much is evident from the tenor of an eight-page type-written letter addressed to the editor by Mr. Strauss, in which he marshals extracts from communications from various photographic organizations, domestic and foreign, addressed to himself, endorsing his attitude *in re* St. Louis, and offering their co-operation in the steps already taken by him. He further calls attention to the fact that all action taken by him was in the capacity of chairman of the committee appointed by the National Convention of the P. A. of A. in 1901.

"In so far as our editorial has given the impression that the gentleman has acted upon his own initiative, we desire to make clear that such was not our thought, as we were at all times in possession of all the particulars; but we wish again to reiterate that Mr. Strauss did not represent the spirit or ideas of those 'photographic *pictorialists* who have gained the recognition of modern photography in the field of art. The distinction between such and photographers generally was clearly in our minds, as an intelligent reading of the original editorial will show, care having been taken to speak only in behalf of the 'photographic *pictorialists*.'

"We do not feel that we have done Mr. Strauss any injustice, and therefore do not see any necessity to print in full his lengthy communication, which, however, we shall be glad to show to any one desiring to see it.

Editors
"CAMERA WORK."

Without in any sense desiring to "take up the cudgels" in any one's behalf (both parties to this regrettable incident being of age and skilled in the noble art), we cannot help expressing the belief that the unprejudiced reader will agree with our opinion that Mr. Stieglitz has spoken and acted unwisely in this matter. It is clear that what Mr. Strauss did was done in the interests of American photography, without class or distinction. It is also clear that his action was the plain fulfilment of a plain obligation laid upon him without seeking or knowledge on his part. It is equally clear that Mr. Stieglitz, in endeavoring to cast reflection on the action taken by Mr. Strauss, was guilty of lamentable indiscretion, of which he should be ashamed, and for which his public apology can hardly make amends.

PICTORIAL PRINTING IN PLATINUM.

BY CHARLES P. MARSHALL.

I CANNOT too strongly urge photographers to get onto the right track in making prints. By prints I do not mean the ordinary, common-place impressions usually dignified by that name, but prints which will do honor to their maker, build up business, and establish reputation. Such prints are not made at the rate of two or three hundred per day on glossy paper, but a few at a time, and with as much care as is given to the pose or the negative.

To fall into the error of making common-place prints is a comparatively easy matter in these days, when the photographer is besieged with an army of new printing papers. Scores of photographers, veterans as well as beginners, have been persuaded to drive their stakes in dangerous territory by the wonderful claims made for the new printing papers. "Ease of manipulation," "keeping qualities," "fine tones," "popular prices," etc.; no claim seems to be too absurd to trap the unwary. Let us not forget that the print is,

after all, the thing upon which our reputations depend, as well as our future prosperity as photographers.

It is not denied that the common-place papers are suitable for middle-price or commercial work. They have their place. Photographers who have to turn out quantities of reasonably good work at three to five dollars per dozen are, of necessity, bound to choose among commercial papers. But when we demand rare and beautiful qualities in portraiture, qualities which will raise us above the standards of the average man and bring us better prices, we must shun the purely common-place papers and take up a platinum paper as the only medium worthy of consideration.

Years of expensive experience have proven to others, as well as to myself, that platinum paper has the widest and most desirable range of tone possibilities. If this were not so the leading workers would not put platinum papers at the head of their list. As a matter of fact, the higher you go in the field of portraiture, so much the more do you see of platinum papers. In most of the best studios they are used exclusively.

Among the quantities of photographs I receive from all parts of the world many prints just escape being good and desirable because they are printed on cheap or inferior papers. There is no doubt in my mind but that photographers could double their prices by adopting platinum paper and printing their choicer negatives in a pictorial way. Those who have given care and thought to their printing long ago came to the conclusion that a paper of quality is essential to quality in the print. In platinum papers we have this desirable quality, and can further be sure of a truthful translation of our negatives, for there is no speculation as to how much of the lights will "tone away" or the shadows "pull out."

The timid and short-sighted photographer says: "My trade won't stand for pictorial platinum prints. I have tried it." But, friend, how did you try it? Unless you show your patrons thoroughly good platinum prints from thoroughly artistic negatives, how can they imagine what a really good platinotype looks like? Pick out your finest negatives, make prints with pictorial qualities, and show them to your customers at a price which will bear out the quality of the prints.

I hear the photographer exclaim: "My beautiful negatives! Platinum papers don't do them justice!" Certainly the negatives are beautiful to look at. They should be, since you have devoted years of time and skill in learning how to make them, how to get those beautiful effects. But your customer is not buying negatives. He wants prints, and if your beautiful negatives do not yield beautiful prints, of what earthly use are they? The customer is quite indifferent as to the peculiar beauty of your negatives, but keenly alive to the qualities required in the print. The better the print, so much the better price you can ask. The common-place print causes no discussion, brings no new business, and gives no satisfaction.

Has it ever been your good fortune, brother photographer, to see a set of prints from an etched plate? Here is a flat proof on a cheap paper, lacking in depth or brilliancy, without any separation between the different planes in the picture. It is worth "thirty cents," at most. Here is a second proof on better paper, and printed with an eye to pictorial effect. The depths of shadow and tone, the roundness of objects and the perspectives, the different planes are all apparent and please the cultivated eye by their variety of effect. Tender lights replete with suggestion of detail, middle distance well interpreted, the blacks carefully accentuated.

The pictorial print is produced along similar lines. The qualities of the etching can be most nearly approached by the photographer who chooses a paper of quality, and has learned how to keep and enhance those qualities by his manipulation.

Excitement in Ohio. Extract from the Mansfield, Ohio, *News:* "The automatic photograph machine recently purchased by H. L. Bowers arrived to-day, and will be in operation to-morrow in the front window of Bowers & Mickley's store in the Bird Building.

"It is considered one of the greatest automatic inventions of the age. You drop a nickel in the slot and get your picture in a minute."

PHOTOGRAPHY BY CALCULATION.

BY A PRESS PHOTOGRAPHER.

PLACE a photographer in surroundings that are strange to him, and he is very much like a fish out of water. He finds that his all but infallibility in the studio deserts him the moment he attempts to photograph a race meeting, or a green and gold interior. There is perhaps no guide surer than a ripe experience; but such is only attained after a long time, and when attained is likely to be on circumscribed lines. In my own experience, where work of the widest divergence has to be undertaken at an hour's notice, I have found the greatest help in mistrusting myself on all matters where some fixed standard can be referred to. Trusting to luck often means losing solid cash; for there is no chance of a resitting for press purposes—often there is no chance of a second exposure.

Whenever I go out to work I refer to my list of exposure tables, and work out the probable exposure which will be required; I know my plate, my lens, I note the light, and I know about the hour at which my exposure will be made. I estimate the class of subject I am to photograph, and so I get a unit, which can be very easily estimated from, to meet any variation in light, or in subject. It is a matter of about one minute or less to get this unit, and the time is saved many times over in the developing.

Nothing is to me more difficult than to estimate an interior; I can get it approximately correct, but miss that exactness which is essential to a negative of full detail. And here let me digress a moment to say that if a press photographer is to be any good at all he must do *good* work. There is a theory abroad that "any old thing" goes with editors. If a man has a scoop that is worth something editors will take what they can get; but when a man is working against others in the field he will find that poor work gets left every time. And if he is sent on an assignment and turns in poor prints, he will not be first choice next time.

I follow the calculation rule as much as possible into my plates and developers. Never, if you can help it, try strange plates or cameras. I stick to the brand I have used for years without variation. And I always use the same developer, modifying it only in individual cases, and where really needful.

It is scarcely a matter of calculation, but I may mention the need of being sure that nothing of use is left behind. A boatload of us went down to Martinique after the volcanic eruption. We found everything covered with a deathly gray monotony. The best pictures taken were those of the volcano from the sea, with the steam hovering over the crater. The pictures of devastation were very moderate in quality, and that because none of us had thought of a color screen; and, of course, none of us had orthochromatic plates—we all used films. Fortunately there is truth in the contention that films are "more orthochromatic" than ordinary plates. Otherwise our results would have been still worse.

NEWS AND NOTES.

Katatype. This is a process originated by Dr. Ostwald, Professor of Physical Chemistry at Leipsic University, and Dr. Oscar Gross. It may be briefly described as a photographic process independent of the action of light. Certain substances are used which produce chemical effects resembling those obtained by photography. The best of these are platinum and silver. According to the *Photographische Correspondenz* the process depends upon the so-called catalytic action of finely divided platinum and silver, which have the property of chemically decomposing certain substances by contact. If a platinized photographic print be saturated with such substances (as, for instance, peroxide of hydrogen), the image will decompose the

latter by catalysis, while those parts free from platinum will remain unaffected. Consequently, by bringing suitably prepared paper into contact with platinum and silver prints, copies may be obtained by chemical action without exposure to light. The process is put forward suggestively, and if stable prints of true gradation can be produced by it, its evolution will be watched with considerable interest.

Printing Out Silver Bromide. In the current number of the *Bulletin de la Société Française de Photographie* appears a communication from MM. Foucat describing an isomeric modification of silver bromide which will print out by day or artificial light. No details are given of the method of preparing this new bromide beyond the fact that "un corps entièrement nouveau en chimie" is used. There is no change in the appearance of the silver bromide and it can be readily emulsified, and its solubility in hypo is increased and it is apparently more sensitive to red than green rays. The authors also state that they find that silver chloride may be prepared in the same way, and while the sensitiveness of this is increased to daylight, they have not yet succeeded in making it sensitive to artificial light. As this new bromide can be emulsified in collodion, it can be used for coating paper, and also glass, and thus transparencies with extremely fine grain can be obtained by printing out. Gelatine as a vehicle the authors did not, or would not, employ, as they consider that the paper of the future is one without gelatine, The new preparation will give a print in the shade of from twenty-five to thirty minutes, and the shadows will not bronze and delicate details are not eaten out by hypo, and it will keep for six months before use. The prints can be toned with gold or platinum, but by the use of certain solutions, such as ammonia, alum, citric acid, or ammonium nitrate, after fixing and thorough washing and the application of heat, a print which would originally be reddish-brown will become black, violet, or sepia, according to the solution used; and if the tone is not all that is desired it can be modified in the same way afterward. The new bromide is sensitive, though but slightly, to the X-rays without development.—*British Journal.*

Occasional users of pyro who object to stained fingers may largely prevent the trouble by soaking their fingers in water before commencing development, and then rinsing from time to time. Pyro stains are always more pronounced when the skin is dry.

EDITOR'S TABLE.

A NEW BOOK.—*Recollections of a Player.* By JAMES H. STODDART, with an introduction by WM. WINTER. THE CENTURY CO., New York, publishers. 255 pages. Price, $1.80; postage, 13 cents.

The author of this entertaining book has been a part of the New York stage for over half a century. He was long known as "Old Mr. Stoddart;" now he is to many of his admirers "*Dear* old Mr. Stoddart." All who read his book will fall in with the "dear," for he has given us a charming and interesting book, covering, as it does, the shadow-catches of an actor's life for two generations and more. He began in Scotland. He wanted to follow the sea, but was compelled by his father to endure the stage for a livelihood. In this vocation he found, as others do in theirs, that privation and discomfort were the price of success. He endured the privation and discomfort and obtained the success to an eminent degree.

We have many times witnessed his performances, with great delight and profit. We seem to be hearing him voice his parts again as we read his book. Some of the things he writes are well worthy of being introduced in a book of maxims for present-day following in our art as well as in others. For example, on page 86, he says: "I used to take particular pains in trying to do my utmost with every part for which I was cast."

Mr. STODDART was early (and very properly) seized by "*New York-itis,*" for he says (page 87) "I made up my mind to remain in New York, however miserable my position, rather than fill a more exalted one outside of the city, arguing with myself that if I had ability New York was the place to gain a recognition of it."

These two quotations show the character of the man. He never spared any pains to secure the best possible results. An example of this painstaking is found on pages 167 and 168. Our actor had ordered a peculiar coat to suit his ideas of one of his "characters." His tailor disappointed him in the making

of the coat, whereupon he says: "I took it out to my farm and spoiled its beauty with Jersey mud. Mrs. STODDART then tackled it, lined it with some heavy old material, jagged it with her shears, and then threw it into the cellar and made a mat of it until it was required. When we got through with that coat it was all that I could desire, and afterward it was most extolled when I used it in the play."

And so we find in this fine book a thousand experiences worthy of thought and following in almost any vocation. The life of the actor is not always such a "wicked" one after all, as it was supposed to be when young STODDART made his début.

FINE PHOTOGRAPHIC STUDIES.—The earnest photographer will find it advantageous to study the work of some of the masters in his art, as painters do in studying the works of the old masters in painting. All the subtleties of half-tone to be obtained by intelligent development; all the skilfulness of good paper-work and printing—the beauties of toning and the niceties of technique, together with the neat putting of the photograph upon the cardboard, may be studied and taught by the fine results of our best men. For this reason we announce with much pleasure that Mr. F. GUTEKUNST, 712 Arch St., Philadelphia, has consented to offer an opportunity to the craft to obtain prints from some of his choicest negatives. His advertisement will be found in the "Specialties" column this month. Be sure to read it. You may not only obtain fine work for your own study, but specimens to put upon your wall, which will, when you can equal them, bring you much patronage. *Study to attain the best.* "Find out the wrinkles."

PHOTOGRAPHS RECEIVED.—Mr. F. GUTEKUNST, 712 Arch St., Philadelphia, recently made some fine photographs of Hon. GROVER CLEVELAND. One 14 x 17 print he has sent us is a model of excellent photography and a fine likeness. It is among the studies offered by Mr. GUTEKUNST, and may be had in various sizes.

A picture holding a great deal of historical interest has come to us also from Mr. GUTEKUNST. It is a cabinet picture of ADELINA PATTI, the famous prima donna. It was copied from a daguerreotype made when she was only eight years of age. She is quaintly dressed (with pantalettes and gaiters), and the pose reminds us old fellows of the first days of our art.

As a copy of a daguerreotype it is an excellent study also, and we are glad Mr. GUTEKUNST found the original and adds it to his list offered for the study of other workers.

From Mr. D. HINKLE, of Germantown, Philadelphia, we have received a very sweet portrait of a mother and child, which does credit to our old subscriber. Nearly forty years of reading of our MAGAZINE has not done our friend HINKLE any harm apparently.

OBITUARY.—We notice with sincere regret the announcement of the death of Mr. OSCAR PACH, of the firm of PACH BROS., New York. The sad event took place March 6th, after a year of pain and suffering.

Mr. OSCAR PACH came to this country in 1873, after service in the Franco-Prussian war, and at once associated himself in business with his brothers GUSTAVUS and GOTTHELF. Mastering the language and the details of photography as a business, he undertook the financial management of the interests centering in the Pach Studio, and to the development of these varied interests thereafter devoted his life. He was a tireless worker, full of good humor, and conspicuous by his remarkable business ability. We are sure that our readers are with us in offering our warm sympathies to his brothers in their great loss.

THE negatives, photographic designs, and other background and accessory assets of the late LAFAYETTE W. SEAVEY, of New York, were sold at public auction, March 9th, at the late Mr. SEAVEY'S Studio at Walton Ave. and Cheever Place. The bidding was spirited, and the whole lot bought in by Messrs. ROUGH & CALDWELL, New York, and PACKARD BROS., Boston, Mass., these two well-known firms dividing the same equally, thus owning the entire "Seavey" accumulation of designs, photographs, and negatives, the result of thirty-five years' work.

IT will pay you to send for the little booklet of the VOIGTLAENDER OPTICAL CO., on *What Taylor Taught Me*, a novel treatment on flatness of field, astigmatism, speed, color correction, and the many other points of the modern anastigmat. The subjects are treated in a way which appeals to the merest novice, and once taken up will not be laid away until finished. Copies of the little booklet may be obtained of the VOIGTLAENDER CO., 135 W. 23d St., New York, as well as their general catalogue, now ready.

THE "Speedway" is a new camera introduced by Mr. G. GENNERT, New York, for rapid movement photography, such as athletic sports, express trains, and similar subjects. The instrument, of the modern compact type, is fitted with a Collinear Lens, Series 2, working at *f*/5.6, and provided with a focusing jacket, which shows the focusing scale on the mount of the lens. The "Speedway" is fitted with a Focal Plane Shutter, which is incorporated in the back of the camera, thus economizing space; the finder is used on a level with the eye, by which means correct perspective can be assured in the view. A descriptive booklet with illustrations can be obtained on application to the manufacturer.

MR. C. O. TOWLES, formerly of Baltimore, has opened a studio for high-class portraiture at 1107 F. St., N. W., Washington, D. C.

PORTRAIT-GROUP
By Gertrude Käsebier

WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XL. MAY, 1903. No. 557.

A SIMPLE EMULSION FOR MATT OR GLOSSY P. O. P.

BY A. J. JARMAN.

SINCE the introduction of platinotype the popularity of matt surface photographic printing papers has been largely augmented. The public taste for prints made upon matt surface paper has taken many years to educate. Not many years ago the majority of the photographer's patrons would accept nothing but a highly glazed prints, while to-day the demand is almost entirely for matt surface portraits. Strange as it may appear, no one ever asked for or expected to see a steel engraving upon a glossy surface, no matter what that engraving represented. The matt surface engraving was always admired for its beautiful and artistic rendering of anything and everything that it represented, and yet the demand held sway for a glossy surface for any print made by photography.

Whenever a matt surface was required for a portrait the usual plan was to sensitize a sheet of albumenized paper upon the silver solution by floating it upon the back of the sheet instead of the glossy face. This plan answered well; the only drawback was that the grain of the paper was of a coarser character upon the back, so that for small portraits this grain was a little too pronounced.

Many photographers who had facilities would prepare a specially salted paper for portraits that were to be colored, and in this way overcome the objection of sensitizing albumen paper upon the back. Nearly every photographer had his pet formula, and guarded it with such care that he would trust no one to prepare the paper with its salting solution except himself. It is a well-known fact to-day that one of the very best surfaces to work upon for coloring in water-color is the carbon print. Apart from its absolute permanency as a base, the surface possesses the right tooth for the adhering of the pigment. It is just such a surface as this that is required upon other prints than carbon, both for finished matt surfaces and for the purposes of coloring. The way to obtain this surface upon almost any kind of paper, and to print it out so that the correct depth is ascertained on sight, will be here described, and anyone desirous of preparing special paper for his own use will be enabled to do so. Some of the crayon drawing-papers can be utilized, as well as many other plain photographic papers that may meet the desires of the photographer. If a glossy paper is desired, the emulsion should be coated on a baryta coated stock.

There will be required, in the first place, two half-gallon stoneware crocks with lids. The best shape to employ is a crock with the sides running straight, with no depressed ridge at the top. One of these crocks is for the preparation of the emulsion, the other to receive the emulsion when filtered. An enamelled iron saucepan of about two gallons capacity will be required, in which to stand the crock for preparing the emulsion, and also to remelt the emulsion after it has become set. The following is the formula for the emulsion, which must be prepared and mixed in the order given. Failure will be impossible if these details are scrupulously attended to.

Having procured two half-gallon stoneware crocks with lids, clean them out well with hot and cold water, and place into one of these the following:

Distilled Water . . .	10 ounces.
Gelatine (Heinrich's, hard) .	4 "

Cut the gelatine into shreds with a clean pair of scissors. Press these shreds beneath the water with a clean strip of glass and allow to soak for one hour. Now proceed to melt the water-soaked gelatine by placing the crock into hot water in the enamelled saucepan, the water standing about halfway up on the outside of the crock. Bring the water to boiling-point, and keep the gelatine occasionally stirred until it is completely dissolved. Then remove the crock to allow the contents to cool down to 120° F. Now prepare the following, which can be done while the gelatine is melting.

No. 1.

Rochelle Salts	90 grains.
Distilled Water	1 ounce.

No. 2.

Chloride of Ammonium . .	45 grains.
Distilled Water	1 ounce.

No. 3.

Nitrate of Silver . . .	1 oz. and 75 gr.
Citric Acid (crushed crystals) .	95 grains.
Distilled Water	10 ounces.

No. 4.

Powdered White Alum . .	90 grains.
Distilled Water (hot) . .	5 ounces.

The latter solution may be made with boiling water. When these solutions are prepared pour into the hot gelatine solution No. 1, stirring all the while with a clean glass rod. Then add No. 2. Rinse the vessels with a little distilled water, and add to the gelatine. Now, while stirring, gradually add No. 3, and lastly add No. 4, which may be very hot. This will cause a decided change in the color of the emulsion. Lastly add two ounces of pure alcohol (photographic). This must be added very gradually with vigorous stirring, because if added too quickly it will coagulate the gelatine and form insoluble lumps. The emulsion must, of course, be mixed under a light not stronger than an ordinary small gas-jet, or under a yellow light obtained by covering the windows with yellow paper. The cover may now be placed upon the crock, and the emulsion put aside for two or three days to ripen.

At the end of this time the contents of the crock, now formed into a stiff emulsion, may be remelted in hot water by placing the crock in the enamelled saucepan over a gas-stove. The emulsion may be broken up by cutting it with a clean bone or hard-rubber paper-cutter to facilitate the melting. Stir the mixture occasionally until thoroughly dissolved, and add the following as soon as the emulsion has reached a temperature of about 150° F.:

Distilled Water	4 ounces.
Pure Alcohol	1 ounce.

The emulsion must now be filtered into the second crock. The filtering is best accomplished in the following manner: Take an ordinary plain-top kerosene lamp-chimney, tie over the small end two thicknesses of washed cheese-cloth. Invert the chimney, and insert a tuft of absorbent cotton about the size of an ordinary egg. Press it carefully down upon the cheese-cloth. Fix the chimney in the ring of a retort stand (or cut a hole about three inches in diameter in a wooden shelf), so that the crock may stand conveniently beneath. In the chimney place a strip of glass, resting upon the cotton, to prevent the cotton from lifting. Now pour in the hot emulsion, and allow the whole of it to filter through the absorbent cotton. This accomplished, we are now ready for coating the paper, which is best done in the following manner:

Cut the paper into strips or sheets, say, twelve inches wide and the full length of the sheet. This will be, let us suppose, 12 x 26 inches. Attach, by means of the well-known photographic clips, a strip of wood at each end of the paper upon the back. Three clips at each end will be required. Having a number of sheets thus prepared, the emulsion should be poured into a porcelain pan or tray, kept hot by standing within another tray containing hot water. The emulsion tray being, say, 11 x 14 size, the paper now is easily coated by holding the clipped ends in each hand, then holding the left end of the paper up, and the right-hand end lowered, so that the curve of the paper just touches the emulsion. Then raise the right hand, at the same

time lowering the left hand at the same rate. Then lower the right hand, lifting the left. Repeat this operation once more; then drain the excess of emulsion at one corner of the tray, say, the left-hand corner. Just as soon as the emulsion has drained, the coated sheet of paper may be hung up to dry, by the hooks attached to the clips, upon a piece of copper wire stretched from side to side of a spare closet or room that can be kept darkened until the paper is dry. In this way coat as much paper as may be required. When it is dry it may be rolled up tight or kept flat under pressure until needed.

If any emulsion remains, it may be kept in a cool place for two weeks, and still be good for coating. Be sure to clean out all the vessels used before the emulsion sets, otherwise this will present a difficult task, since the emulsion sets into an almost insoluble condition.

This emulsion is so made that it does not require to be washed. If it is washed it will become spoiled. It is easy to make and easy to use. If it is desired that only small sheets of paper are to be coated, they may be floated on the emulsion, but in this case the paper must be damp, which is easily accomplished by wetting a sheet of blotting-paper, then covering this with two dry sheets of blotting-paper. Place the sheets to be coated upon these, and place under pressure during the night. Next day they will be in good condition for floating.

When the coated paper is dry, it may be printed and toned just the same as any other printing-out paper, with any toning-bath, and fixed in hyposulphite of soda as usual. Toning may be carried to a rich blue-black, or if not carried too far will remain a beautiful sepia color. After well washing and drying it will be observed that the surface corresponds with that of a carbon print; if the paper has been of a somewhat absorbent character, the surface will be entirely matt, and will give an excellent tooth for coloring or finishing in sepia, black and white, etc.

NOTES ON P. O. P.

New Thiocarbamide Toning Baths.

BY R. E. BLAKE SMITH.

THE term "printing-out paper," or P. O. P., is now generally understood to apply to one special class of printing-out papers—that class, in fact, which is obtained by coating paper with an emulsion of either gelatine or collodion, with silver chloride or an organic silver salt, generally the citrate.

While P. O. P. cannot compare with carbon or platinotype in respect to the permanence or the artistic beauty of the results obtained, yet, especially for small pictures, the prints given by it may be very pleasing, and for many kinds of work it is without a rival.

For instance, where one wishes to get every detail in the negative rendered in a print with the utmost degree of clearness there cannot be any doubt that the proper course is to employ P. O. P. Again, a far wider type of negative yields a good print on P. O. P. than is the case with any other paper. P. O. P., especially the glossy variety, has the property of giving brilliance to prints from really flat negatives, and this, I think, is the chief cause of its undoubted usefulness and popularity. Really good and suitable negatives alone yield pleasing results with platinotype, bromide, or carbon papers. P. O. P., fortunately, is not so exacting.

The first thing to be thought about with this paper, as with all other photographic materials, is how are we to keep it in good condition. The conditions chiefly governing the time which P. O. P. will last are the temperature and state of humidity of the surrounding air. It is absolutely essential that paper should be kept in as dry a state as possible, and it should also be stored in a moderately cool place. It will keep fairly well in a really dry cupboard, but

the proper place for it is in a desiccator. Desiccators can be bought from any dealers in chemical apparatus. Generally speaking, a desiccator can be described as an air-tight vessel containing some drying agent, as fused anhydrous calcium chloride, concentrated sulphuric acid, or phosphorous pentoxide, so arranged that it does not mess or contaminate in any way the article which is put into the desiccator to be kept dry. Fused calcium chloride is the most convenient drying agent for photographic purposes. A plain tin with a well-fitting lid may be made to do fairly well for a desiccator, fused calcium chloride being kept in a small vessel inside. Of course one must see that the calcium chloride is renewed or fused afresh when necessary, but this will not be often. I am sure that if photographers would use desiccators for storing the various materials they use which it is important to keep dry, they would soon repay themselves for any initial outlay.

About the actual printing with P. O. P. I will say nothing, because all that I could say is probably well known, and, moreover, can be found in the many works dealing with the subject. I will say this, however, that if any delay of more than a few hours should occur between printing and the next operations, the prints should be put back into the desiccator.

In some directions one is advised, directly after printing, to trim the prints. Such a plan, however, is objectionable, as this exposes the edges of the picture to more toning solution than the other parts, and so unevenness is very liable to be produced.

After printing, the prints are first well washed. I will here repeat the often-before-given advice to change the wash water very often while it continues to show milkiness. It is better to use a small flat dish for this washing than a print-washer, and to keep the prints constantly moving by continuously bringing the lowest print to the top. One's hands are better than clips for this purpose. The duration of the washing should be until a few minutes after all the milkiness which is caused by basic silver salts washed out of the paper has disappeared. Some recommend immersion in sodium chloride solution before washing, but careful and complete washing is all that is necessary, and, moreover, the salt bath alters to some extent the toning properties of the print in a way which will be considered later.

After the prints have been washed they are toned. There are several methods of toning P. O. P., but those that are best and most commonly employed depend upon depositing gold or platinum on the image. Such deposition is not a plain plating, but involves the formation of certain silver compounds at the same time. In this article I propose to consider only gold-toning methods.

The color of a deposit of finely-divided gold depends on the size of the gold particles forming that deposit, and varies from red to blue as the size increases. Obviously the tone finally obtained on a print depends on the amount and color of the deposited gold. Gold-toning baths all consist of a very weak solution of auric chloride mixed with certain other substances to aid the process, and these substances usually so react with the auric chloride as entirely to alter the form in which it exists in the solution.

Many such solutions have been proposed, but while most of them will work satisfactorily with the older and rather similar albumen paper, very few indeed are suitable for P. O. P. Sodium phosphate (Na_2HPO_4 $12H_2O$), sodium acetate, sodium formate, and formalin all have their advocates, the last two being invariably accompanied by a little sodium bicarbonate, but ammonium sulphocyanide is that by far the most commonly employed for this purpose.

The objections to all the above toning baths are that, in the first place, they are very uncertain in their action, and extremely liable to bring about uneven toning, and, in the second, that the range of color which they allow, as a rule, is both very small and never adequately under control. The unevenness of tone above referred to is more marked if the high (comparatively) concentrations of gold generally advocated in the printed instructions sold with most papers are employed.

The advocates of any of the above methods often plead contributory negligence on the part of any who fail to be satisfied with the proceeding they them-

selves favor. Of course absolute cleanliness is of great importance in all photographic manipulations, and especially so in toning P. O. P., and in this connection it may be remarked that any one who uses vessels of porcelain should be careful to discard a dish directly the glaze on its inside becomes cracked; otherwise contamination will probably arise.

I am quite certain that the majority of failures in toning arise not from want of care on the part of the operator, but from defects inherent in the methods employed. I cannot help remarking that certain people are far too fond of ascribing carelessness to others—a proceeding which, besides wanting in courtesy, displays very often a lack of grasp of their subject and a certain narrowness of outlook. It is true, of course, that under certain circumstances all the most commonly recommended baths will yield a fair proportion of good results; otherwise I do not think they would ever have been recommended. It seems to me that a fair summing up of the question is contained in the opinion I have often heard expressed, that the baths under discussion demand as a condition for satisfactory behavior in toning a certain type of negative.

The type of negative suitable may be said, generally, to be one lacking in half-tone. The type is always narrow, although rather less so with some baths than with others.

It has always been difficult for me to understand why the sulphocyanide bath has so far outstripped all its rivals in popularity. Probably it is because it is said to give purer whites than any other does. If by this is meant that, under normal conditions, all baths except the sulphocyanide give slightly discolored (*i. e.*, yellow) whites, I consider the statement absurd; but I am ready to admit that under certain circumstances the sulphocyanide bath may possibly be better than any of the other above-mentioned baths as a means of obtaining pure whites. I believe that the yellowing of whites is generally to be traced to badly-preserved paper, and I think it possible that with such the sulphocyanide may give purer whites than any other of the above, especially if, immediately after toning and before washing, a bath of 1.5 per cent. ammonium sulphocyanide solution is used.

I am absolutely certain, however, that with a really good brand of paper in decent condition there is no need to confine ourselves to this bath in order to obtain pure whites. I am afraid that some brands of paper are possessed of such poor keeping qualities that it is generally impossible to buy them in good condition from the retailers.

It has also been maintained that the addition of an acid to the toning bath is a thing likely to cause yellowing in the whites. This is very probably true under certain circumstances. If the acid is of such a nature, and is added in sufficient quantity to form a staining silver solution either by rendering capable of staining a harmless silver solution formed by other ingredients in the bath or by itself dissolving out some of the silver from the emulsion, then no doubt the whites will suffer. I cannot allow, however, that the mere addition of an acid within certain individual limits to any toning bath is a condition generally liable to injure the whites. While I certainly do not recommend the sulphocyanide toning bath as a method generally suitable for ordinary P. O. P., still I should like before leaving it to say that the proper course is to make up any solution of a sulphocyanide to which P. O. P. is going to be submitted with freshly-distilled or freshly-boiled water, and to add to it a little sodium sulphite—about one-tenth of the amount of sulphocyanide. The reason for this is that a soluble sulphocyanide in the presence of the oxygen contained in ordinary water somewhat attacks the silver image, especially the finer parts.

This attack of the image is a not unimportant contributing cause to the unevenness of tone so common with this bath; but it is very far from being the whole cause. I myself have found the addition of a little alum to the sulphocyanide bath decidedly beneficial with some brands of P. O. P., about 0.5 per cent. being near the right quantity. It appears to me, however, that the chief condition of success with a sulphocyanide bath is that the emulsion on the paper should itself contain the gold. Certain it is that the new

Ilford "Kalona" gold-containing paper is characterized by the ease, certainty, and evenness with which toning proceeds with prints from all kinds of negatives, employing the bath—ammonium sulphocyanide twenty grains, alum one and a half ounces, water twenty ounces—as advised in the printed instructions. The bath should be made up with freshly-boiled water. The range of tones obtainable, however, is, as far as my experience goes, only small.

When the ordinary P. O. P. is being dealt with, the toning bath which is, I am sure, the most suitable and of far the most general application is a slightly acid solution of thiocarbamide and chloride of gold.

The great advantages of such a solution are the absolute evenness with which toning takes place with all types of prints and the very wide range of tones obtainable; and not only is the range wide, but the method is so perfectly under control that we can always obtain with ease a desired color.

The method has been mentioned several times of late in the photographic press, one of the latest notices being *Photography*, December 6th, 1902, page 841. Thiocarbamide is a white crystalline substance melting at 172° C. (342 F.). It dissolves easily in water and alcohol, its solutions having a bitter taste and a neutral reaction to litmus. In some of its reactions it seems to possess the formula, $CS < {NH_2 \atop NH_2}$, and in others the formula, $NHC > {NH_2 \atop SH}$

It is obtained, as first observed by Dr. Emerson Reynolds in 1868 (*Journal Chem. Soc.*, vol. xxii., page 1), by heating ammonium sulphocyanide (thiocyanate) from 170° C. to 180° C. (338° F. to 356° F.), when a partial transposition analogous to that occurring in the formation of carbamide takes place. On heating either ammonium sulphocyanide or thiocarbamide for forty-five minutes at 170° C. (338° F.), a mixture consisting of 25 per cent. thiocarbamide and 75 per cent. ammonium sulphocyanide is formed. Thiocarbamide forms compounds with acids and various metallic salts.

The action of thiocarbamide in the toning bath depends on the formation of the compound,

$$2[CS(NH_2)_2]AuCl,$$

which was first described by Reynolds in the before-mentioned paper. In the toning bath gold is deposited from the thiocarbamide compound, and silver takes its place.

The reason why a small amount of acid is added to the toning bath is because in neutral or alkaline solution the silver or gold compounds of thiocarbamide are unstable, and sulphides of the metals are slowly formed, and this property has a further effect on the toning procedure, about which more will be said further on in this article.

A good formula for a bath giving tones varying from sepia to a rich red is:

Gold Chloride . .	1 grain.
Thiocarbamide . .	1 to 2 grains.
Citric Acid . . .	3 to 150 "
Water	24 ounces.

The variation of tone is effected by varying the time of immersion and the amount of citric acid—the more acid present the redder the tone. Increasing the thiocarbamide lengthens the time of toning. The bath is meant to work at a temperature of from 14° to 16° C. (57° F. to 61° F.); lowering the temperature increases the time of toning, and *vice versa*.

A very large number of acids can be substituted for citric acid in the above solution. Nitric acid is especially useful when reddish tones are desired, 0.34 to 1.2 minims of the concentrated acid replacing the citric acid in the formula already given. It is interesting to note that in nitric acid solution thiocarbamide is condensed to a disulphide.

$$NH = C < {NH_2 \atop S} - {H_2N \atop S} > C = NH,$$

and this may account for the difference.

Purple tones can best be obtained by using a bath with a rather greater concentration of gold. The following gives most beautiful results:

Gold Chloride . .	2 grains.
Thiocarbamide . .	3 to 4 "
Concentrated Nitric Acid	9 to 13 minims.
Water	30 ounces.

The above solutions are not meant to be in any way final, but are only suggested as starting points for further experiments. The addition of sodium chloride has the effect of causing the toning action to be

accelerated, and the resulting tone to be colder than it would otherwise be. Potassium nitrate, ammonium sulphocyanide, and other metallic salts have much the same effect; in fact, the presence of a relatively large number of metallic ions other than gold in a toning solution seems to cause the color of the deposited gold to be much bluer than it would otherwise be, and so limits the range of color very greatly. This, I think, is probably one of the reasons for the poor range of color given by the phosphate, sulphocyanide, and other such baths. I only advise the addition of salt when cold brown tones are desired.

Prints treated previous to toning with sodium chloride solution also tone more quickly than those which are merely washed, and they also yield colder tones than would otherwise be the case. I always allow three and a half ounces of the above solutions for every four quarter-plate prints to be toned, and I never tone two lots of prints in the same bath. After toning with the thiocarbamide bath I have always seen one advised, in the very few references I have met with myself on the subject, to wash the prints in water and then fix in 10 per cent. hypo. Such a proceeding, however, is wrong.

If one washes a print toned with a thiocarbamide gold solution in a print washer for five minutes, the chances are nothing will happen. If, however, the washing is prolonged for a very few minutes more, very distinct stains will appear, which, as the washing is continued, will spread all over the print. Ilford and Barnet papers stain less readily than the others I have tried. The stains are due to the formation on the print of certain almost insoluble thiocarbamide-silver compounds, which decompose when not in the presence of an acid yielding as one of the products silver sulphide (Ag_2S), to which the stains are due.

The simplest plan is to fix directly in *alkaline* hypo solution.

If one desires to wash between toning and fixing, it should be done in a dilute acid solution, say concentrated hydrochloric acid, 1 part; water, 1000 parts.

An objection may be felt by some to immersing a print straight from an acid solution, although very dilute as here, into a solution of hypo, even when this is made decidedly alkaline; but, if this be the case, there is a very simple way out of the difficulty. All we have to do is to substitute another powerful solvent of silver compounds for hypo in the bath immediately following the toning or acid washing. The most convenient substance, I think, is sodium sulphite. I think it best, although not necessary, to add enough acid to the sulphite to form just a little bisulphite. The following is very suitable:

Sodium Sulphite (crystals)	4 ounces.
Citric Acid	90 grains.
Water	20 ounces.

Most of the acid in the above is used up in neutralizing the free alkali always contained by the sodium sulphite, and only a little goes to form bisulphite. The prints are left in the sulphite bath for about fifteen minutes. At the end of this time they are probably completely fixed, but in our present state of knowledge I certainly think it better to employ hypo as well. In this case the prints are either washed in running water for about ten or fifteen minutes, and then transferred to the ordinary P. O. P. hypo bath, or else transferred to this bath direct from the sulphite.

The fixing bath almost invariably used for P. O. P. is a 10 per cent. solution of hypo, and this should be made alkaline by the addition of about 1 per cent. of sodium carbonate crystals, or a little ammonia solution. Ten minutes' immersion in the fixing baths is ample when the prints have been toned in any bath but the sulphocyanide. In the case of a sulphocyanide toned print, it is best, I think, to use a 12.5 per cent. solution of hypo, and to fix for at least fifteen minutes, as in this case there seems to be a molecular change in the metals forming the image, the tone finally obtained being greatly benefited thereby, and this change is much slower than the actual fixing.

With regard to sulphite fixing, Sir W. Abney, in his *Treatise on Photography* (tenth edition, 1901), writes that he "has for some years fixed his silver prints with a 20 per cent. solution of sulphite of soda. In this body there is no liability for sulphur to be liberated during the fixing operation; all that can be liberated is sul-

phurous acid. Silver chloride and organic compounds of silver are soluble in the sulphite, but only to the extent of one-tenth of that to which they are soluble in the hyposulphite. Silver sulphite is formed which is soluble in sodium sulphite, and this is readily soluble in water. It is too early as yet to state the permanency of prints so prepared; but there is every reason to believe them to be more stable than prints fixed in the ordinary manner."

It is always necessary that there should be a large excess of sodium sulphite over silver sulphite, or else the solution will stain gelatine. It is for this reason that Velox and other similar (chiefly gelatino-chloride) papers should be developed with the ferrous oxalate developer. If a sulphite containing developer is used, one should only employ the same solution a very few times.

Many toning and fixing combined baths have been suggested, and with some very even and satisfactory toning is obtained. The tones also are often very excellent in quality, although whether one can say beforehand exactly what is going to be obtained is, I think, doubtful. It so happens, however, that the most satisfactory toners are those containing some lead salt or alum, or both, and with these ingredients in the bath no reliance whatever can be put on the permanency of the result, no matter what precautions are taken.

I find that thiocarbamide added to a plain solution of hypo and gold chloride will cause such to tone P.O.P. readily. Whether the results with this bath are permanent I cannot say. The tones obtained are limited in range to various rather cold shades of brown. It gives, in fact, much the same tones as the lead-hypo bath. It may be interesting to point out that the fact of neutral combined baths giving rather cold tones (*i. e.*, depositing bluish gold) and yielding warmer ones on the addition of alum is in accordance with what I have already said with reference to the ions of metals other than gold in the thiocarbamide separate bath.

The following recipe may prove interesting to some, although it must be stated clearly that I do not recommend this or any other combined bath:

Thiocarbamide	140 grains.
Hypo	2 ounces.
Gold Chloride	2 grains.
Water	20 ounces.

With thiocarbamide as an accessory a combined bath can be mixed containing sodium sulphite instead of hypo. As an example:

Thiocarbamide	140	grains
Sodium Sulphite (crystals) .	2½	ounces
Gold Chloride	2	grains
Citric Acid	54	"
Water	to 20	ounces

may serve.

I believe fixation in this bath is complete, but would not guarantee such to be a fact. In any case I do not think the bath is of more than theoretical interest, owing to the poor tones it gives.

With regard to the final washing of prints, it has been shown lately that this must be accompanied by repeated squeegeeing. If prints are washed in a print washer for two hours, and squeegeed every forty minutes (*i. e.*, three times in all), finally being left to dry on the support, I think this will be found sufficient.—*Photography.*

NOTES ON TIME DEVELOPMENT.*

I MAY begin by asking the question—What is development? and to answer that question I cannot do better than quote Mr. Alfred Watkins' definition—"Development is the process of reducing those particles of silver salt which have been affected by light to the black or metallic state."

*Accompanying a demonstration of the Kodak developing machine before the London Camera Club.

Further, Mr. Watkins goes on to say: "A finished negative consists of a contrast, or a series of contrasts, between tones or densities." If the negative is a perfect one, these tones or densities must represent the true differences in tone which exist in the subject photographed. It is a well-known fact that length of exposure very largely affects the differences in tones and

contrasts obtained in the resulting negative, and it was formerly held to be a fact, and is still by some, that these contrasts can be altered by altering the composition of the developer before, and even after, the development has begun. For instance, if when developing a negative the tones appeared in rapid sequence and fogged all over—an indication of over-exposure—it was held to be the correct procedure to add a strong restrainer, usually bromide of potassium, or mix a new strong developer containing bromide, the idea being that the bromide held back the lower tones while density was being built up in the high lights.

If the negative was under-exposed, the developer was diluted and a large quantity of alkali was added. In May, 1890, Messrs. Hurter and Driffield read a paper which quite revolutionized the photographer's ideas of development. Messrs. Hurter and Driffield exposed a number of strips of a photographic plate, a portion of each strip being exposed in the following ratio: 1, 2, 4, 8, 16, etc. These were developed with varying developers, in order to ascertain what difference in gradation they severally produced. They found that the differences in the steepness of gradation did occur, *but* they found that this difference was *chiefly a matter of time*, and that all variations of the developer were capable of producing a maximum steepness of gradation if given sufficient time to act. Later, it was pointed out by Mr. Alfred Watkins, who had worked on this subject for five years, that a certain power over results can be acquired in the following way: —(*a*) for short exposures, by omitting altogether or using only a small trace of bromide; (*b*) for over-exposure, by using ample bromide from the commencement. That variations in the amount of alkali or developing agent only alter the speed of development. That if all the tones have appeared, no modification or alteration of developer can alter the course which development takes, but will merely alter the speed of development (fogging excepted). In other words, that no plan of tentative development, adding alkali, etc., give better control than sticking to the developer you commence with. That whatever developer you use, certain stages of contrast are passed through, and that the great controlling power lies in stopping at the right stage. *In all cases contrast increases as development proceeds* up to a limit decided by the quality of the plate. The restraining influence of bromide in the developer was shown by Hurter and Driffield in an article in *The Photographic Journal* for July, 1896. They explain that this holding back influence on the lower tones is exercised during the early stages of development only, and gets less and less as development proceeds, and at last ceases, so that at an advanced stage the result with bromide is exactly the same in all gradations as if the same plates had been developed without bromide. This would go to show that it is practically no use to add bromide to the developer if all the tones have appeared. Mr. Watkins also finds the same thing. He says, speaking of a developer strong in pyro and bromide: "It is certain that such a developer has great power to hold back the lower tones *when it is used from the commencement*, but I have never been able to discover that any such selective power exists when once these lower tones have appeared, or that the methods usually termed tentative development confer any power which cannot be equally well exercised by using a standard developer from the commencement." Hurter and Driffield show that *under and over-exposed negatives ought to receive the same time of development to secure the same amount of contrast*, the difference between the resulting negatives being that the over-exposed negatives will use the higher tones of the series, and the under-exposed negatives the lower tones of the series. I show three negatives in support of this statement (*a*) exposure 2; (*b*) exposure 4; (*c*) exposure 8 secs. These three negatives were all developed in the same developer for five minutes. It will be noticed that (*a*) is under-exposed, (*b*) is correctly exposed, and (*c*) is over-exposed; but it will also be noticed from the prints taken from these negatives that the contrast between the various tones is practically the same. It will be seen that this principle is an important one applied to a mechanical developing machine, such as the one before you this evening. With regard to under-exposure, Mr. Watkins says that when this

is discovered after the image appears, there is no advantage in adding alkali or in changing the developer in any way, and the important thing is to avoid over-development. A thin negative may perhaps give a fair print, a dense one never would. When it is known beforehand that the minimum exposure has been given, there is certainly an advantage in using a developer not containing any restrainer, provided the film or plate in question will stand such a developer. It has been stated that wonders can be done with under-exposed plates or films by heated development, but in this case the plate or film must be submitted to a previous treatment, to prevent the emulsion from frilling or dissolving. The various developers go to work in different ways, some, such as pyro, start slowly, but once started, build up density in the high lights quickly; with others, such as metol, the image appears almost immediately, but the high lights are slow in attaining the required density, but if both are carried on for a sufficient length of time the results will be practically identical. Mr. Watkins says: "In my trials I found that development proceeds at a regular pace, and might be compared to a journey, and that if we could observe how long it took to proceed a certain portion of that journey, it is easy to calculate the time necessary to reach the required stage which is to be the termination. The first stage of the journey is from the time of pouring on the developer to the moment the image begins to appear, and the second is from the appearance of the image to the point at which the required stage of contrast is attained; the one always bears a definite ratio to the other, so that when we have observed the time of appearance we can easily calculate the total time of development by multiplying the first by a certain number, called the multiplying factor. This number depends upon the developer, and, to some slight extent, upon the plate."

The application of this rule in practice will be best explained by taking a concrete example. Say a photographer exposes a plate, and notices that the time of appearance of the image is sixty seconds, he gives a development of four minutes. If the resulting negative is satisfactory as regards contrast, he calls the multiplying factor for that developer 4, and supposing another time he exposes another plate, this time somewhat more fully, and the time of the appearance of the half tones is 45 seconds, then he knows, using the same developer, that to attain the same contrast as he attained before, he must develop for three minutes. With a good quality plate, a considerable variation in exposure (about one to ten or more) can be made, and if development is timed by this method the resulting *prints* will be practically alike, although the negatives resulting from the longer exposures will be much denser than those from the shorter. Of course, this method cannot be applied in the case of the developing machine, but in the case of the latter there are certain fixed quantities—the film is always the same make and the developer is always the same, the time is fixed, and as to the question of varying exposures, it does not matter, provided they are within a reasonable limit of the latitude that the film gives. If some are hopelessly over or under-exposed, they are useless anyway, and, unless known beforehand, could not be remedied by development in any other way. One of the principal arguments which I have heard brought against the Kodak developing machine is that you cannot see the exposures beginning to develop; you cannot alter the developer, supposing they should be either under or over-exposed. I have tried to point out in the previous remarks that an alteration of the developer is of no use unless the over or under-exposure is known beforehand, when a special developer can be made up and used from the very beginning. If this is the case, the same could be applied in the case of the developing machine. Should it be thought that the majority of negatives have received a minimum exposure, then a slightly weaker developer containing no bromide can be used. This will do no harm to the negatives which have received correct exposure. In conclusion, if it becomes a well-known fact that to obtain the greatest amount of success with this machine it is necessary to give fairly correct exposures, it will have the very excellent effect of compelling more attention to conditions of exposure, which is no more than is necessary, whether the machine is used or not.

Mr. Hare then demonstrated the Kodak developing machine. Briefly described, it consisted of two compartments, one of which contained only the celluloid apron. The roll of film is taken down into the developer, and the apron is gradually wound round it, the film being kept apart by india-rubber edging on the apron, which allows free access to the developer. The handle is then turned for five minutes, and the film is fully developed at the end of that time. The developing solution is poured out (a special arrangement being provided to exclude daylight), the hypo poured in, and the fixing done by again rotating the film.

MEN WHO HAVE MISTAKEN THEIR VOCATION.

THERE are some men who ought never to be in business—that is to say, never in any position of responsibility or in which they have to depend on their own unaided efforts. No one would seek to deter a man from the legitimate ambition and desire which most of us experience to become our own masters, and possess a little business of our own, with the chances of its eventually becoming a big one. But it would be doing a thorough kindness to some men if they could be prevented, or at least discouraged, from wasting their capital and energy on a venture in which there is not the remotest possible chance of their succeeding. It would, in fact, be for the good of the community at large if some men could be prevented by law from entering on business for themselves. As a matter of fact, our bankruptcy laws do provide for it in so far as a man who has shown himself fraudulent or hopelessly incompetent to manage business affairs is prevented from starting business again during a period of suspension. But this only operates after a man has made his first plunge, and it is this latter step which does all the mischief in the business world.

It would seem that there was something to be said in favor of the old system of trade guilds, which prescribed restrictions on a man going into business for himself, and ensured therefore that a man was fitted by experience and equipped with adequate means for his enterprise. He was not allowed to ruin himself while injuring the industry in which he was engaged by cut-throat competition based on no sound rules or laws of business. We grant that the principle of these trade guilds was not economically sound, and was obstructive in the main to industrial progress, but that they exercised considerable influence on commercial morality is undoubted.

The point we wish to make is, that if it were made a little difficult to start in business, the class of people who mostly fail would probably be deterred at the outset. An auctioneer or pawnbroker must take out a license before he can begin, and this has a wholesome restrictive effect, which would be an advantage if applied to other industries. If, for instance, the scope of the Bankruptcy Court were widened so that it became necessary for everyone seeking to enter into business to register themselves and give some references, it is probable that its operations at the other end of business life would be considerably reduced, and the commercial community would thereby be the gainer.

Yet no doubt any attempt to apply such a scheme would be hailed as "more grandmotherly legislation," and contrary to the spirit of a free country, so that probably we shall go on for all time, tolerating the iniquitous principle that any man is at liberty to have a shot at running a business for himself, and is permitted to play "ducks and drakes" with his own and other people's money. It is assumed that the loss of his own capital is a sufficient penalty to act as a deterrent, but in the majority of cases the capital a man starts with in business is a very small proportion of the amount of his liabilities when he goes bankrupt.

So it is, then, that firms of stability have to provide in their profits for bad debts, and in the long run the honorable trader and the public have to pay for it. The question is whether this state of things does not quite balance any disadvantages

which might accrue from a limited amount of restriction.

Coming back to the point whether some men should be allowed to start at all, we would say that it is not always the case that men are not fitted to commence business from want of capital, but because of a want of appreciation of certain principles of business which are as inexorably fixed as the laws of the Medes and Persians. If, for instance, a man does not know how to keep a set of commercial books, or does not appreciate the necessity of getting some one to do it for him, he is as absolutely unfitted for business as a patient from Colney Hatch. If he is incapable of appreciating the difference between a gross profit and a net profit, and understanding the various ways in which an apparently magnificent gross profit is whittled down to a miserably inadequate net profit, or eventually to a minus quantity, his aspirations ought never to soar above a weekly wage.

The young man who goes into business for himself soon finds that he cannot lean upon others as he was able to do when in employment. He must throw aside his crutches, stand upright, be self-sustaining, self-dependent, or sink back to his former subordinate position. It is now necessary to think and plan as he never did before, and to learn the art of seizing opportunities by being on the watch for them. He is obliged to husband his resources so as to make every shilling do the greatest possible execution. Every faculty he possesses must be on the alert, and every resource must be taxed to the utmost to bring about the best results.

If a man grasps what is required of him when in business for himself and makes good use of his knowledge he will find business is a grand education. Those who work for others, unless they are of the class of people who are natural dependents, or who are remarkably constituted, have only a part of their powers brought into action. Employment continuously in the service of others fetters mental action and cripples native capacity, while freedom develops forethought and self-sufficiency. Therefore we do not wish to discourage the legitimate aspirations of those whom nature has fitted for success in life ; but there should be directive and helpful guidance existing, beginning with early education, which might be much better adapted to business needs, and encouragement should be given to commercial education after school life. Employers should demand of their clerks and assistants something more than the ability to read and write and add up a few simple figures. The standard of fitness for business is rated too low, and that is the main reason why there are so many failures in life. If the prizes were made more difficult of attainment, there would be greater effort made to secure them. We make it too easy for the naturally idle and mediocre youth of the nation to make a living, with the result that the majority settle down to doing nothing more than obtain a bare sufficiency.—*Penrose's Process Work.*

THE MOUNT AND THE PHOTOGRAPH.*

BY H. D. GOWER.

THE mount which has been used for photographs has, during the last twenty years, undergone considerable modification, as most of you know, and, like many things which come and go, has been subjected to fashion to a somewhat alarming degree in many ways. Photographs being but a single color, or monochromatic production, leave very little scope for invention in color, but probably more changes are brought about in the material that is brought into use from time to time, and generally supplanted by fresh and newer mediums, but rarely far from the colors to which we have been trained to some extent as a suitable tint for mounting our pictures upon. Years ago the walls of our exhibitions had upon them little else than a plain, white mount, sometimes cut out, which contained the picture, mounted in the centre with, perhaps, a line of some color surrounding the print, leaving a wide

* Read before the Croydon Scientific Society.

margin of white, and outside this light frames. It was the fashion of the moment; to-day this is all changed.

Now, the subject of mounts is one that should always command some attention from the photographer; of course, pictures may be kept in boxes, or albums, where they are not always detachable, and are sometimes inconvenient, and to my idea a print and mount should (if it is worth it) be a creation in itself, especially if some individual design and arrangement are personally carried out in its production. The commercial mount is, of course, useful where prints are multiplied by the dozen, but when you have a picture that is worthy of some consideration of arrangement, then by all means leave the bought mount alone and carry out your idea in other ways. There are at the moment any number of tinted papers that adapt themselves to home invention; paper makers have recognized this some time ago, and they now offer these papers in so many tints and varieties that it is difficult to find a color that does not exist, but you must pardon me if I tell you I am somewhat conservative in saying I prefer the white or cream paper for many subjects if they are small. I am not alluding to large photographs that require no mount, but those little pictures that so often find their way into my hands for the portfolios, a small print badly trimmed, that, had the producer just given a little care and attention and mounted the subject, he or she might have found on the criticism sheet some words of praise for even the mount, and perhaps a little for the picture.

A plain mount has much to recommend it, rather than it should be decorated in such a fashion to call one's attention from the print, and although a colored mount may be used, it should be of a nature that the color harmony of the picture is not destroyed. Some years ago that dreadful frame known as the Oxford frame was the cause of much comment and dissatisfaction on our exhibition walls, with the result that it was at last barred from being hung. Then we had the Oxford line in red decorating our trade mounts, and afterward, to some extent followed by ornamental corners, not of Oxford origin, but at the same time not beautiful, and so on until we reached the age and craze of matt surface prints, bromide and platinum, that called forth our tinted mounts with a plate-sunk mark, which was, of course, an effort, to some extent, to copy and plagiarize the engraving. From this we got away to large pictures, which were framed up close in dark frames, and in this point we seem to have tried to follow out the fashion, when occasion has arisen, to mount our small pictures upon dark mounts to give some prominence in the final framing.

The passe-partout is both an easy and early form of both mounting and framing, and has been somewhat revived during the last few years, but it has its objections, and was commonly used to illustrate books of the sixteenth and seventeenth centuries. It is simply the mount, and a sheet of glass bound together, lantern-slide fashion. If such a method of binding as this was adopted with all pictures that were to be framed, and which I advocated years ago, we should hear less of dust and pictures getting dirty with age, and probably it would be a great protection from waste gases deteriorating our prints when hanging in a room; for convenience and economy of exhibiting, this method has much to recommend it, but for permanent work is not desirable.

The mediums at our disposal for making mounts suitable for our photographs are many, and perhaps one of the most useful as a basis is brown paper. There are many against it (for the simple reason because it happens to be brown paper), but there are any number of browns to be had, and a large selection of samples is valuable, and it must not be forgotten that a brown paper is capable of being stained with colors that will entirely alter the tint, and be quite as good as many of the commercial tints we now get and have to pay a much larger price for; but for lighter colors we must make our choice accordingly.

Colors may range from pure white, through the grays, to a black, if necessary; but when we choose a white to range through other colors we come to tints that are in no way suitable for mounting pictures except when the mounts are very dark indeed, and, in nine cases out of ten these are unsuitable. The harshness of such

combinations is very pronounced if the picture is not of a suitable tint, and that is rare indeed, unless the color of such a picture matches to some extent the colored mount (such as we may get in some carbons and toned prints), and then they should be of such a nature as to be used with that amount of judgment so necessary with good mounting.

The second hint in mounting is a method that may be carried out in several ways, first by masking the print, and, to some extent, reducing the size of the picture; and, secondly, by using a matt of any tint desirable, and, what is more, it has the effect of making the print appear larger than it really is.

Now comes the question of home-made mounts. How many times has the question been mooted that the sizes and shapes of our photographic plates are inconvenient for pictures upon artistic lines, and how many times have photographers been told to trim their prints to the proper limit and leave the plates alone? And once for all, let me say that the size of our plates has nothing whatever to do with any of our pictorial creations. It is the latitude that we can take advantage of in this respect, to make our mount to fit our finished print, and not the print to fit the commercial mount. The making of mounts calls for no particular skill by any one who has a straight-edge and a thick piece of board, such as ash, beech, teak, or oak, and a supply of different tint papers.

The print may be mounted on a series of tints, or simply plain with a line of some quiet color round it, or even pencil or crayon, or a tint may be made by the so-called old-fashioned method of splatter work (so much in vogue by our grandmothers years ago for decorative leaf work), and which I shall show you on some future occasion.

In conclusion, I am afraid I cannot go further. Your own judgment and invention must stand by you in carrying out schemes of work suitable to your subjects, and although I may perhaps have wearied you with my few remarks, I am afraid I cannot claim anything new.

WHAT IS A SAFE LIGHT IN THE DARK ROOM?

THIS has always been a somewhat vexed question, and it once again formed a topic for discussion at the last meeting of the Croydon Camera Club. In this discussion two well-known dry-plate makers took part, and their opinions as practical men have value. It has just been said that the question is a vexed one, and we imagine it is likely to be one among the general run of photographers who do not always study conditions. Under some conditions a light may be perfectly safe, while under others it is just the reverse. A light that will be quite safe with plates of medium rapidity may fail completely with those of a high degree of sensitiveness. Again, a light that may have no effect on ordinary plates—*i. e.*, those not made "color sensitive"—would be useless for isochromatic ones. Setting aside the theoretical part of the subject, we come to the practical question, What is a safe light and at the same time the most comfortable one for the ordinary photographer to employ?

We often hear that one or two thicknesses of such or such material may be relied upon, but nothing is often said as to the source of illumination. What would be perfectly efficacious with a night-light or a candle behind it might be just the reverse with a gas-flame or electric light. It does not follow that a dimly-lighted room with a red light is a whit more reliable than one illuminated with an orange one, for we have seen some samples of ruby mediums and glass that pass a large amount of the blue and violet rays, though sold for dark-room lights. Mr. S. H. Wratten, speaking at the meeting above referred to, said that he pinned his faith to two thicknesses of orange fabric, and also offered a handsome premium to any one present who would give him a brighter light with the same margin of safety. For ordinary plates—those unorthochromatized—we always use two thicknesses of the paper known as "canary medium," with an oil-lamp behind. It yields a pleasant light to work with, and is quite safe with the most sensitive plates, if they are not

brought too close to it; but of course it does not answer with isochromatic plates. Another very pleasant light is one thickness of flashed orange and one of green—that known as "cathedral green"—and this is safe with ordinary, though not with isochromatic plates. With these a ruby light is absolutely necessary, and even with that the plates must be well shielded from it.

It is really extraordinary how many photographers neglect to test the safety of the light they work, considering it is such a simple matter. All one has to do is to put a plate of the kind ordinarily used in a dark slide, withdraw a portion of the shutter, and expose to the light—say, a foot from it—for a minute, then develop. If no difference, or only a slight trace of fog, is seen, the light may be considered practically safe for that kind of plate; that is, supposing ordinary care is taken that it is not exposed unnecessarily long to it, either in putting it into the slide or in the early stage of its development. It must, however, be kept in mind that, although a light may be considered practically safe, there is a limit to the time that a plate can be exposed to it without suffering. We have suggested the above test for ordinary plates, but we have never yet met with a medium that would stand it with the most sensitive isochromatic ones. But with them a test should be made, as it will enable the worker to judge how much or how little liberty he may take with his light. Many plates, isochromatic and otherwise, have been condemned when the fault has really been due to the light.—*British Journal of Photography.*

NEWS AND NOTES.

Lumière's intensifier has many good points. It is easily prepared and simple in use. Dissolve 50 grains anhydrous sodium sulphite in 1 ounce of water and add 5 grains of mercuric iodide. This solution should be kept in orange glass bottles away from the light. For use, immerse the negative in the solution until it becomes brown, then wash well and redevelop to the desired density in any of the modern developers.

The Care of Lenses. A word of warning may not be out of place at this season of the year to photographers concerning their lenses. The air is charged with moisture, and we are experiencing considerable fluctuations of temperature, which cause condensation on the surface of the lenses. Some of the glass used in the manufacture of anastigmats is far more susceptible to deterioration from atmospheric causes than the old varieties. We had strong demonstration of this a short time ago in an expensive lens which had "rusted." It had been carelessly exposed for a very considerable time in a dealer's window, and from the dust upon it there was no doubt it had not received any attention. When the lens was cleaned it was found that the surface of one combination had suffered considerably, and the lens had to be returned to the maker. The photographer, if he respects his pocket, should be careful of the condition of his lenses. They should be cleaned periodically and kept in cases. Two tightly-fitting caps also afford good protection. Keep lenses in a dry, moderately warm place. The best method of cleaning them is first to brush off the dust with a camel-hair pencil, then slightly moisten the surface with the corner of a clean linen rag moistened with methylated spirit, and finally to well dry and polish by rubbing with the clean linen duster folded into a small pad.

Quick-drying Backing. M. Helain gives the following process for the preparation of a quick-drying mixture for the prevention of halation:

Finely-powdered Red Ochre . .	2½ ozs.
Dextrin	2½ "
Water	2½ "
Alcohol	½ oz.

Mix with a glass rod until a perfectly smooth mixture is obtained, and allow to stand some time before use. Apply to the back of the plate by a hard flat brush. Rub off with a moist sponge before develop-

ment, dry with absorbent paper or cloth, in order to completely clean the plate.

For years, in season and out of season, the value of an attractive show case has been urged on photographers. But in spite of urging, the unkempt window is yet common in the land. Why this should be is a little difficult to understand. It may be that more men than we suppose have become photographers because they were not fit for other trades; but we hope not. Whatever the cause, the fact is here that windows are often dirty and untidy; set out with soiled or faded photographs. An untidy window frightens away custom; a bright, clean one attracts people. Spring fashions are all in order now. Is your window going to follow the fashion and be a pleasure to the eye?

Bromide paper has never had fair treatment. If only photographers did justice to its possibilities, instead of turning out just passable work on it, we should see more of it. Bromide paper, in the hands of one who works it thoroughly, has great possibilities.

The Royal Photographic Society in their recently issued circular of next fall's exhibition, list just two things which on the art or esthetic side cannot be allowed. Would-be exhibitors may submit any class of work by any process, and anything will have a chance except—hand-colored photographs. These will not be accepted. The other impossible is an Oxford frame! On this latter point the judges in addition give a list of undesirables. "Excessive breadth in frame or mounts; silvered, gilt, or oval frames, or projecting mouldings are undesirable and may prevent photographs from securing admission. It is desirable that each photograph be separately framed."

As last year, special provision will be made for professional work. It is rather interesting to note that the premier society of Great Britain treats the fraternity as a side line; and yet this is practically the only show where any display of professional work—as such—is arranged for. Any general work, portraiture, landscape, architectural, engineering, etc., may be submitted, for it has to pass a selection committee. No awards are given, but any pictures hung are charged a small wall space. Those who wish to make a big display may hire a section of wall. The wall reaches as high as anyone will care to hang pictures, and the charge is 25 cents per running foot. These sections may be draped or decorated by the exhibitor, subject to the approval of the selection committee. It is safe to prophecy that the show will be by no means representative of the best that English photography is capable of, and that but few of the best men will be in any way represented in the professional section.

Voigtländer and I. Now that the busy season is well over and photographers have a little leisure for reading, we are receiving many letters from purchasers of Mr. Ryder's *Voigtländer and I.* In almost every instance our correspondents express pleasure and surprise at the wealth of practical information given by Mr. Ryder. Apparently those who bought the book were prepared for entertainment and amusement, but did not look for practical instruction. As we have already pointed out, *Voigtländer and I* is rich in suggestions and the teaching of experience. It could hardly be otherwise, coming from a veteran with more than half a century of life behind the camera. Post free to any address, $2.50.

Flashes from Chicago. "The largest amount of flashlight powder," says the Chicago *Tribune*, "that has ever been used in taking one picture was used by George R. Lawrence yesterday when he took a photograph of the Board of Trade, with all the traders clamoring in the pits. Twelve pounds of the powder was consumed in the single flash. The powder was distributed in 350 lights extended around the balcony rails. The lights were discharged simultaneously by electricity. The trading was at fever heat when the flash was made. This is the second large photograph Lawrence has made during the week; the other was at the Roosevelt banquet, and was reproduced in *The Tribune*. On Monday Mr. Lawrence will climb to the top of a 160-foot tower he has erected in the stockyards and take a panoramic view of the yards."

FROM THE D. ROSSER STUDIO
Pittsburg

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PICTORIAL EFFECT IN COMMERCIAL WORK

From a photograph by Alfred Holden

Philadelphia

PICTORIAL EFFECT IN COMMERCIAL WORK

From a photograph by Alfred Holden

Philadelphia

BY GERTRUDE KÄSEBIER

FROM THE D. ROSSER STUDIO
Pittsburg

THE EYES IN PORTRAITURE.

BY STANLEY C. JOHNSON.

THE papers on hands and hair in portraiture, given in earlier issues of this MAGAZINE, have brought us many letters of appreciation. The subjoined paper, reprinted from the *Amateur Photographer*, forms a supplementary article which should be useful to the careful portraitist.

THE life and soul of a good face is so often dependent upon the eyes that it is very necessary to consider this part of the features quite separately. The advanced worker pays them full attention, perhaps without knowing that he does, but the comparatively uninitiated, for whom these lines are chiefly intended, is very apt to spoil many plates and weary his patience, because he fails to recognize the great part in expression that eyes play.

The beginner—or shall we call him the student?—will do well to adopt a few rules, capable, it is true, of much latitude, while since the serious worker shows off his ability most when he is overcoming a difficulty, he naturally has no need for elementary maxims.

When a certain portrait is intended as a picture, then the matter is a simple one. The sitter reads a book, begins to put on a pair of gloves, or plays with a ring, and, of course, has the eyes centred on the action. But very often it is a question of just a head and shoulders portrait, where no action is possible, and where the only aim is to secure an artistic record of the sitter's features. Then it is that the student finds the eyes a source of trouble.

Perhaps he has tried, without success, to obtain that countenance which seems to look at us in whatever position it is placed. It is a favorite attitude, and so expressive of life and vigor that we are often tempted to strive for it. The sitter's forehead should not be placed quite parallel to the front of the camera, but at a small angle, and his eyes should be turned toward the lens in such a way that one of them looks slighly—very slightly—over the nose. The head should be, for preference, on a level with the camera; but this I do not consider an absolute necessity. If the forehead is parallel to the camera-front, and the eyes look straight at the lens, the sitter almost invariably assumes a stare, and consequently spoils the portrait.

The semi-profile gives another favorite position for the eyes. In this case, again, staring is frequent. A really good preventive is to hang a medium-sized bill in some position where the sitter can read it while the cap is off. The printing on the bill should not be too large, and should contain more words than could be read at a glance. This does not allow the sitter to become too conscious of his position, and also finds work for the eyes.

As a rule, our faces are not quite symmetrical; one side is better than the other, and perhaps one eye is bigger than the other. Therefore full faces are not usually advisable. At the same time it must not be forgotten that both eyes should figure in a photograph of anyone with fine eyes.

Various expressions call for definite positions of the eyes. Do not let them adopt a pious expression, or one indicative of pity, unless the sitter and the surroundings are suitable. The upturned, pleading eye has a very limited use, as only Sisters of Mercy, choirboys, and a few others show it off to satisfaction. For people in everyday attire it is not to be recommended. Fancy expressions will not do for men. In their cases, then, the effective positions are almost restricted to semi-profiles and the one first described. The reader may suggest that the profile position is still open to them. As a reply, it must be mentioned that very few sitters can affect an unconcerned expression while being taken in this attitude. They become far too conscious of their surroundings.

The question of lighting is one that requires a few words. In the first place, a strong top light must be avoided, or else the brows will cast a shadow over the eyes, making them appear sunken and dark. Secondly, fair eyes must be shaded from too powerful a light, or loss of expression will result.

Never tilt the head so much that the whites on either side of the iris of the eye

are joined in the photograph. The look that this will depict is one that suggests vacancy.

Whether to retouch any portion of the eye or not is a difficult matter to decide and a still more difficult matter to perform. At all events, the whites should not be made to print whiter, unless the sitter had unusually peculiar eyes, while to tamper with the iris probably means to rob it of its brilliancy and make it appear as though it were modelled in colored clay.

Of course, there are many photographs to be seen in our magazines and shop windows that seem to disprove some of the rules laid down in this chapter. They are either the work of skilled hands or the photographs of beautiful sitters. In both these cases the operator can, unlike the student, afford to ignore the everyday rules of posing.

THE ARRANGEMENT OF A GROUP.

BY M. M.

(Translated for WILSON'S PHOTOGRAPHIC MAGAZINE.)

THE further we advance in what may be justly termed Artistic Photography the more we emancipate ourselves from that monotony of subject which has overruled the photographic representations of the last twenty years, the more pressing become the questions as to how, after the difficulties of the single picture have been successfully dealt with, other difficulties may be similarly overcome. One of the most difficult, perhaps the most difficult of all tasks undertaken by the photographer, is the efficient representation of several persons in one picture—the group. The group must consist of a number of single pictures together, but may not be broken up into isolated pictures. The space, looked at from a distance and as a whole, must appear filled with lines and forms expressing life and action as well as a certain amount of design. However simple these requirements may sound, they demand of the photographer artistic sympathy, much study, and patience.

He must be acquainted with the laws regarding the structure of a picture; he must know the principles (akin to those of pictorial art) of composition; he must be able to separate the important from the unimportant, and to combine, suppress, or tone down accessories.

It seems, therefore, not out of place to write about these requiremeuts, as only on the sound basis of knowledge and capability can art in photography be developed and protected from the so-called "works of art" which have so little to do with art.

Many of our up-to-date practising photographers do not possess energy, ambition, or love of their calling sufficient for self-education, and in thinking over the decline of the photographic industry we are forced to come to the conclusion that a considerable part of the blame is due to many professionals lacking knowledge and ability. It has been recently remarked that the beginnings of photographic portraiture indicated progression along similar lines to those now worked upon by the great bulk of photographers.

Originally, photography was practised by artists and by real art-lovers, and we have pictures from among those "beginnings" which might well serve us as examples. This opinion is shared by many competent judges. When we consider how vastly superior are photographic materials of the present day to those of forty years ago, we think it would be well to investigate the reason of this retrogression and also find out the differences between the early photographers and those of today. Any connoisseur would tell us that the difference lies in the conception of the subject. We might reply: "Other times, other views," but nature remains the same. While from the earlier portraits real flesh-and-blood people look out at us, the photographs we possess nowadays seem better fitted to adorn the pages of a fashion journal. The human countenance, once

the point of interest, must give way to the fashionable or *chic* gown, the dainty hat, the immaculately dressed curls, in fact to the art of the modiste and of the hairdresser. We would not wish, of course, to banish all that is modern—fresh methods of expressing beauty must ever be given a place of their own—but the fact remains that the point of view of most photographers is a very narrow one, and in only exceptional cases are we striving to repair the ravages of the photographic "man of business."

Formerly group photographs were taken by painters, men of artistic taste. How had they the advantage over us, seeing how far behind us they were in technique? They possessed artistic feeling, which we lack. They knew of nature from their own studies, whereas we know nature only through more or less bad copies. If we wish to overtake them we must, at least, use good instead of bad copies, and, above all things, we must return to nature.

With regard to the good copies, we can earnestly recommend our readers to obtain some of the beautiful reproductions after pictures by the old masters. They are comparatively very cheap. It is not enough, of course, for these pictures to be casually glanced over and then placed in an album. Their value may not be appreciated until the master's work be pondered over and studied carefully for perhaps a year. Let the student hang these, in simple frames, upon his studio wall; let him constantly look at and compare them (however useless this may at first appear) with his own work; and in time he will come to recognize a few of their wonderful qualities, and at the same time to confess that in order to compose *pictures* in the stricter sense of the word he will have to set about his work in a very different manner.

Of course, not even the most skilful photographer could ever hope to produce a picture equalling a group of Franz Hals in composition, truth to life, or interest; but it is surely unnecessary to produce those groups so constantly met with of persons resembling wax figures in their pose, and with the light and shade perfectly evenly distributed.

When we speak of the masses of light and shade, balance and unity, contrast and harmony of a landscape, we must remember that the functions of these must never be omitted in the arrangement of a group of figures.

The arrangement of form, line, and space can be manifold, but must always aim at a self-contained, pictorial appearance. It is just as dangerous to "stretch out" a group as it is to select a monotonous background. Let the figures be posed as close together as possible without crowding, taking care that the principal person be the centre of interest pictorially, and let the tones emphasize the important points at the cost of the unimportant ones.

An old writer has the following prescription for the composition of a group: "Give the first place unto the King, the next unto his attendants or other persons of note; should there be present those of lesser worth, place them without more ado in the shadow." This advice must not, of course, be literally followed, "those of lesser worth" being liable to take offence if treated merely as so much background; but the idea is right in principle. Figures placed in the shadow need not be on that account unrecognizable, and in following the above advice the difficulty of a "restless" appearance in the picture is obviated.

Straight, hard lines should be avoided as much as sharp corners, regular, repeating shapes, and parallel figures and actions.

A lifelike photograph should seldom represent a symmetrical appearance, for only in rare instances do these occur in nature.

A modern artist who painted a Daniel in the lion's den with Daniel standing in the middle with a couple of lions symmetrically arranged to the right and left of him would make himself ridiculous. An independent picture, aiming not at decorative space filling, but at a faithful copy of nature, could only represent the lions in different attitudes, as they would naturally have appeared. This holds good for all photographic grouping, which ought to represent nothing but nature.

Let us consider another popular method of photography than which nothing could be more objectionable.

In having to do with pictures of a very large size (we have recently seen a "Com-

memoration Day" and an "Alumni Union") "cutting out" and "pasting on" are frequently resorted to.

After a hasty sketch of the general arrangement the persons represented, as well as the accessories and the background, are photographed separately in a given position, size, and light, and the plates are enlarged and printed separately.

Then begins the work of the retoucher. He laboriously cuts out the picture with knife and scissors and pastes it on to the ground according to his sketch. The edge of the photograph will then be erased, corrected, or completed with pencil and brush and united as far as possible to the ground. Afterward, when the picture is framed and glazed, the deluded public will either not observe the cutting-out business, or in observing will admire the dexterity and neatness with which it is carried out.

In the reduced photograph the work of scissors and brush is less obvious, but the picture possesses even less clarity and interest. The price of such a photograph must be very high, otherwise it would not pay to do the work, and the method is pursued in every branch of modern photography.

Many a reader may say, "Why disparage this method? Have we not for years attained good results, earned any amount of money, and satisfied our public with it?" We answer by describing the effect given by one of these same productions, which came, by the way, from one of the best studios.

In spite of every effort made by the photographer the "cutting out" and "pasting on" was sufficiently obvious to even an unpractised eye, any depth of tone was lacking, and the perspective of the painted background was wholly false, as the figures in the foreground were as clear and sharply defined as those behind, besides which, one beheld retouched boots and drapery, forced high lights, etc., and yet the whole tone was gray and of an equal value all over.

Could not even this method be used with better effect? Yes, with regard to certain points, not with regard to all. Depth, perspective, and a natural effect must ever be lacking.

Money may be made, and a not too exacting and inartistic public may be pleased with the results of such a method, but a *good* photograph will never be attained by it.

It seems very necessary to do something to combat the one-sidedness and the limited range of treatment in present-day photography, and as there is no means of learning, save by personal experience, we should use every available means of adding to our store. One of these means, demanding only diligence and a love of the art, is the hand camera. The study of typical or accidental appearances in nature by means of the hand camera is of the greatest importance both for groups and for single pictures. But how many photographers set to work in this manner? Most of them never bring their apparatus out of the studio; many of them look upon "snap-shotting" only as an amusement for amateurs. But is it not the progress of many amateurs a proof that there are snap-shots and snap-shots, that instantaneous exposures can be made in an artistic spirit and can be of immense educational value? Thousands of opportunities are daily offered to the photographer of making studies of a charming pose, a quick, life-like action, and when he not only "snaps" but takes the opportunity of discriminating between the accidental and the characteristic, when he exerts himself to form of the scene a picturesque whole, and, finally, if he gives himself trouble over the careful finishing of the picture, even his studio work will derive benefit from the habit. Not only his technical powers, but also his powers of imagination will be strengthened, and he will find it easier to divide the natural from the unnatural. He will also keep further away from the set pose, which is always a forced and stiff arrangement. Let us now run over the leading principles of group-taking. After receiving a commission to take a group find out first the number and character of persons. In many cases the studio may not afford sufficient accommodation, but the question *where* the exposure is to be made being of the greatest importance, the artist should make himself accurately acquainted with the locality. Let him carefully note the light and shade

and the background, which will probably require altering. Then let him make a hasty sketch of the arrangement, which, however poor in execution, will be of the greatest service to him. Lines leading upward and outward should be looked for as giving life and action. After making this sketch pose the persons and strive to let them forget that they are about to be photographed (this will present some difficulty) and to look as if there were some meaning in their being thus assembled.

Then comes the critical moment of exposure, only to be rightly decided upon by the artistically educated photographer. It seems at first an impossibility, but even here practice will make perfect.

There are several ways of attaining the end, but the end remains always the same, the lifelike and harmonious picture. Any one can work according to the examples showered upon us in the illustrated press, and it is partly the lack of development of artistic and imaginative power which is at the bottom of the decline of the photographic industry. The warehouse photographers have the same furniture, the same studios, the same materials as the professional photographer has; why should the productions of the one be so much worse than the productions of the other, as they both pose according to given examples?

Year in, year out, we see hundreds of pictures, and hardly any of them is better than those of the warehouses. Let us not shrink from earnestly seeking the reason for this evil, and it must assuredly be found.—*Das Atelier des Photographen.*

COMBINING SEVERAL NEGATIVES IN ONE PRINT.

In the course of a recent lecture on "Pictorial Photography" before the Camera Club, London, Mr. A. Horsley Hinton explained his method of making combination prints. As Mr. Hinton is a past master in this delicate detail we republish part of his lecture for the benefit of our readers:

He had been reminded that, in not being able to precisely demonstrate the method that he adopted of combining parts of two or three or four negatives together without showing any joins, he lay open to the charge of not taking them far enough. Instead of masking out with cotton wool or paper, his method was to mask out accurately and exactly by making the mask itself a facsimile of the original, and blocking out. If preferred, the thickness of the glass could be allowed to intervene, and which he thought was rather an advantage. Long before he attempted that somewhat more exact method he used to enlarge both his landscape and cloud negatives, and print from them in the usual way. He found a mechanical difficulty in working printing frames in large sizes, because it was necessary frequently to examine the print a great number of times, sometimes to put it on an easel and see if one was getting the nicest arrangement of light and shade; if not, then one part must be printed more than another. His method of printing was first to get a drawing-board and cover it with a piece of cloth, put down upon this the sensitized paper, on the top place the negative, and then, by driving in blanket pins on three sides close to the edges of the negative, the whole was secured; the negative could be removed any number of times necessary and the print examined. It could be put on an easel, the whole of the print being seen at a glance; he could then judge whether the top or bottom half or any other portion of the print was as he wanted it. A negative was selected in which the clouds were to be used. A piece of plain glass of the same size was covered with the ordinary transparent tracing paper floated on water and blotted off; it was then well gummed at its edges and placed on the glass, this, when dry, being as tight as a drumhead. He then went over the outline of his landscape negative with charcoal or with stump and powdered black, the remainder being covered with brown paper. Negative and mask were bound up in exact registration, and according as he wished the clouds to

be sharply defined or not the screen was placed above or below. If a part of the print were exposed to the light it had a softening or deadening effect. If any part of the landscape was coming too hard he could expose part of it, return the negative and regain a certain amount of definition on the top of the softened-down portion. If one wanted to accentuate some light or deepen some shadow it was easily done. He would show them some things which he assured them he would not do outside the Camera Club. He had put a certain amount of charcoal on the back of that negative (shown), and they would see that he had managed to accentuate some of the lights in the foliage. He thought they would see the advantage of being able to get free access to one's print was great. (Cheers.) He would now show them how far it was possible to go when once they started to exercise control over their prints. In the next picture Mr. Hinton had introduced a little more light on the tree stump and the foreground, but the damaging feature of the whole thing was a too-prominent black rock—an ugly and unpleasant thing from the composition point of view. He thought it was best removed (result shown), and they would see that it was quite simple with a stick of charcoal and a bit of tracing paper on the back of the negative to remove rocks and, if necessary, to remove mountains. (Laughter.) There was no jugglery, no conjuring about it, and, he thought, nothing dishonest. If one was successful he could do anything—the successful man escaped all blame. (Cheers.) In showing a rough print, Mr. Hinton said, suppose he wanted to get the suggestion of greater distance and atmosphere in the middle of the picture, that would mean keeping that part back and allowing the foreground to print fully; to do that with platinotype would mean the wasting of many sheets of paper before one could hope to get a successful result. His drawing-board came in useful here; they would suppose the print partly printed from the negative (shown); at some stage he intervened between the negative and the print, or else on the outside of the negative, a piece of tracing paper, and he covered with charcoal all portions he wanted to keep back. Standing over his print on the drawing-board—stopping printing by putting in a mask—sunning it down and putting in a cloud would take a long time. He had, quite unconsciously, made the negative very thin; it printed on platinotype, and yet it was as thin as any negative he had, and if he were to put a match behind it the flame of the match would be seen right through. With regard to the combination of several negatives, he preferred to do it on one transparency—a good deal could be done in that way—it was very useful and made one's pictures much more interesting.

In showing a 15 x 12 inches direct negative Mr. Hinton said he thought it would be more pleasing if a group of cattle were introduced by his method of combination printing; he ventured to think that, if any of them tried to do combination printing in the older methods, they would find it exceedingly troublesome and risky. Getting his group of cattle, which was quite a misfit for the landscape picture, in which he wished to insert it, he had to carefully measure what size it would have to be enlarged to be proportionate; then by printing it in and adding clouds the picture was completed. He would show them how he masked out particular portions of the negative.

Mr. Inwards said: How is the mask made?

Mr. Hinton replied: Simply by working round it with charcoal; from his cattle negative he simply made a silver print, that silver print contained the cattle with a bit of meadow and a white background, which was carefully cut out with a pair of scissors, and was then stuck on the landscape negative exactly where he wanted it to come, and thus he brought his drawing-board into use, fixing the negative, film down, on the sensitized paper by the use of blanket pins driven into the board close against the edges of the negative. The result would be a print of the landscape with the cattle in white, and now he had to get the print of those cattle exactly into that white space—which would be practically impossible by the old method—so as not to show any edge. As a matter of fact, by his method it was exceedingly easy.

METHODS AND FORMULÆ.

THE annoyance caused by a tap which splashes badly in the sink may be obviated by several means, *i. e.*, patent anti-splashers, etc.; but these methods, besides being in some cases, expensive, are often intricate, and liable to get out of order. If, however, the following hint is taken the cost will be practically nil, and the chance of getting out of order will be about the same quantity. The idea is simply to tie a short length of india-rubber tubing onto the nozzle of the tap, securing it by means of copper wire twisted tightly around. The convenience of this little device will be found very great, especially when one is washing prints, plates, etc.

CARBON TISSUE, after it is sensitized, usually requires a matter of about eight or ten hours, at least, to dry; and this is very inconvenient if one is in a hurry and wants to make a print "while the sun is shining." The best way under these circumstances is to sensitize in the usual way, and then, having blotted off the surplus liquid, to immerse the tissue in a bath of alcohol or methylated spirit, allowing to remain for several minutes. The tissue is then taken out and blotted off, so as to render it surface-dry. It is then hung up in a current of warm air, protecting it from strong light, when it will dry in a few minutes. In this way tissue may be prepared in less than half an hour.

A GUM CYANOTYPE PROCESS. Cyanotype, ferro-prussiate, or the blue-print process, discovered by Herschel in 1842, is based upon the property of ammoniated citrate of iron and potassium ferricyanide together undergoing decomposition by light, producing insoluble Prussian blue (Fe_5Cy_{12}). Paper coated with a solution of these two salts is exposed to light under a negative, producing a beautiful blue positive, which is washed in water and fixed in sodium sulphite. An early modification, suggested by an eminent authority, was the addition of gum arabic, to prevent the solution spreading unmanageably within the pores of the paper, and allow the precipitated Prussian blue to agglomerate and fix itself on the fibres. A further modification of the original formulæ was the addition of potassium bichromate, which salt improved the keeping qualities of the paper. It occurred to me that by adding both substances to the formulæ a modified gum-iron print could be produced combining the qualities of both processes.

My experiments have not yet crystallized out to any definite formulæ, but the following will give good results:

Ammonio-citrate of iron, 10 p. c.	1 part.
Potassium ferricyanide, 10 p. c.	1 part.
Potassium bichromate, 5 p. c.	2 parts.
Gum arabic solution	*quan. suff.*

This solution may be modified to produce various blue and green negative and positive papers. Printing in the iron salts, however, has not the advantage of permanency, although the pictures produced are of undoubted beauty; and I would suggest other chemical combinations, producing a change of composition and color by the action of light that could be similarly applied. Mercury and sulphur under the influence of light deposit a beautiful brown pigment, as in the sulphide of mercury printing process.* Many metallic oxides also produce various colors when reduced by light, but space forbids their detailed description. In all these processes a visible image is produced sufficient to judge their correct exposure by, thus abolishing the actinometer.—FRED. EDWARDS, in *Amateur Photographer*.

Now and then it is found necessary to remove the varnish from a negative for some purpose or other. This may be achieved by immersing the negative in Columbian spirit for five minutes and rubbing with a pad of cotton wool. If any resin remains, place in spirit to which a little ammonia has been added, and again rub with wool. Then rinse twice with spirit and flow water evenly over it.

* See "Cyclopædic Photography" (Wilson).

GREEN stain for picture frames can be made by dissolving verdigris in hot vinegar to the depth required, and give the wood as many coats as necessary; or a solution of aniline malachite green may be made in methylated spirit and applied with a brush; or a packet of green dye may be dissolved in water and applied.

FORMOSULPHITE (see this MAGAZINE for April) is a new compound put on the market by Messrs. Lumière to replace both the alkali and the preservative in the preparation of developers, and its simplicity in use has much to commend it. The making of developers from formulæ frequently presents a difficulty to some photographers who are not skilled at the work, and this preparation will come as a boon to the man who does not care for ready-made developers and likes to prepare his own with a minimum of trouble. To make up a good pyro developer one proceeds as follows: Dissolve nine parts of formosulphite in one hundred parts of water, and then add one part of pyrogallic acid. This makes a most excellent developer, clean and active in use and with little evidence of stain, just a tinge of yellowness, perhaps, but yielding a good, quick-printing negative. Metol, pyrocatechin, eikonogen, hydroquinone, paramidophenol, and several other developing agents may be employed in much the same way, so there is no need to desert an old favorite. Formosulphite keeps well without alteration, either in powder or solution. It is economical, and does not seem to soften the film, as some alkalies do. The developers may be mixed to secure certain definite results by alteration of the proportions of formosulphite; thus for over-exposure one would decrease the quantity, or for under-exposure add rather more. At ordinary temperatures the makers tell us water will dissolve 28 per cent. of formosulphite, and a solution may be made up of:

Water	100 parts.
Formosulphite . . .	28 parts.

which will keep indefinitely, and may be used in proportionate quantities. We consider the preparation will speedily become an invaluable one to the practical photographer who likes to mix his developers with the judgment that experience teaches.

PERSULPHATE OF AMMONIUM. We doubt if many photographers fully appreciate the value of this salt for the improvement of over-dense negatives, says the *British Journal of Photography*, and we agree with the opinion. When a plate is found to be under-exposed the temptation is to continue development in the hope of getting more detail in the shadows. The high lights become overdense, and a negative is frequently produced which has a peculiar charm of brilliant contrast. It is a delight to the beginner when taken from the fixing-bath, but the print, when taken from the printing-frame, reveals the delusion. The length of the scale of gradation is far greater than that of the printing paper, the shadows being blocked and the high lights chalky. Such a negative may be greatly improved by use of the persulphate bath. It is well to bear the fact in mind, even when developing. If the plate shows that the exposure has not been quite sufficient, it is preferable to get all the detail possible by continuing development, even at the expense of completely burying the high lights. Judicious after-treatment with a bath of ammonium persulphate will bring the high lights to printable density without affecting any of the detail in the shadows. An amateur recently asked us for advice concerning his negatives, and upon inquiring into the matter we found that his difficulty was of this character. The plates had been exposed in a hand camera and over-developed to get detail in the shadows. Enlargements had been made from them with an oil lantern, and, after hours of exposure, only prints of the hardest character could be obtained. The plates had been under-exposed and over-developed. A recommendation to use the persulphate reducer was a revelation to him, and from the same negatives he obtained some good enlargements.

WE have received from Tennant and Ward, New York, a book on *Pictorial Composition* by H. R. Poore, A.N.A. ($1.50) which impresses us as an unusually valuable work for photographers. A review will appear in an early issue.

OUR PICTURES.

A FEW months ago we republished from a contemporary a note by Mr. R. Child Bayley, describing his visit to the studio of Gertrude Käsebier, on Fifth avenue, New York. The appearance of the note brought us requests for a glimpse of Mrs. Käsebier's work in photography, and, by a fortunate chance, we are enabled to meet the wishes of our correspondents.

The two examples of portraiture by Mrs. Käsebier included among the illustrations of this issue are by no means properly representative of her remarkable skill as a photographer. That can be studied at the exhibitions of the Photo-Secession, in *Camera Work* and other public prints; but they are profitable and interesting as showing forth two qualities observable in all her work, the qualities of simplicity and sincerity, so often overlooked or neglected in the work of the average studio.

During these last few years photographers have departed largely from the ideas and ideals which formerly prevailed in professional portraiture. New methods in lighting and the treatment of the subject have been introduced; new standards have been created and enthusiastically proclaimed. Those who can mentally compare the work shown at Buffalo last year with that displayed in Washington in 1890 will appreciate the difference between the old and the new methods. We have had text-books on "artistic lighting" and a flood of "art" in talks, demonstrations, and books by so-called professors. Out of it all good has come, but much "claptrap" has been mixed with the wisdom, and photographers have, here and there, fallen into error. It was, perhaps, to be expected that "individuality" would be overdone and eccentricity over-developed. Mr. Pattison touches the point in a characteristic way in a recent number of the *Aristo Eagle*. It is all very well, indeed, to "stamp one's individuality upon one's work," so that the world, seeing it, may say, "This is Jones," or "That is Smith." But as photographers we should not forget that we are making portraits of other people, and that in a portrait the personality of the subject must be predominant rather than the personality of the photographer; in other words, the photographer should bend his every effort to portray, in an unmistakable way, the characteristics of his subject rather than his own individuality, skill, or manner as such.

This is doubtless easier said than done. The professional photographer has so long dabbled in tricks that simplicity and sincerity are forgotten virtues. As the professional puts it: "Heaven forbid that I should portray Mrs. Robinson as she is in life!" But the truth can be told without offence. It is very much to Mrs. Käsebier's advantage that she has never learned or used the "arts" which most professional photographers master "as part of the business." Ignorant of these "arts," her effort is naturally concentrated upon her subjects with that directness which proceeds from sincerity and simplicity of method. We have seen much of her work; some we have enjoyed, with some we have not been able to agree; but we have always had pleasure in its freedom from any striving after effects of lighting and posing such as we see day by day, year after year, in professional portraiture. In it all we see an honest endeavor to express her perception of the character of the subject, and to express this as simply as was possible; and yet Mrs. Käsebier is a professional photographer in every right sense of the phrase.

Let us look at our reproductions from her prints. The child at the window, pointing with eager interest at the carriages on the avenue below, gave the photographer a glimpse of the child as it is in the familiar life of the home. The portrait was secured then and there without any attempt to arrange the little one under the skylight with conventional accessories. What device of "woolly lamb" or "etched ground" could have improved the portrait?

The mother with her daughters, left to themselves or engaged in friendly chat, readily dispose themselves in an arrangement at once characteristic of their familiar relation and pleasing in composition. Why disturb the friendly chat for

a more formal setting? By such simple ways and with such sincerity of method has Mrs. Käsebier won for herself and her work the admiration of all interested in the possibilities of photography.

We get another point of view in the portraits sent from the D. Rosser studio, Pittsburg. Unfortunately the reproductions fail to convey the interest of the originals, the red-toned, glossy prints sent being unfavorable to the engravers' processes. The photographer here was blessed with subjects in themselves unusually attractive. Wisely he has presented them very simply. The harshness and hardness of our engravings are not seen in the originals, which give us the true textures—soft, round modelling and liquid depth in lips and eyes. We are confident that the portraits as sent out by the photographer gave pleasure to those for whom they were made, and did their maker honor by their fine quality.

Mr. Alfred Holden's two prints of commercial subjects have fared somewhat better at the engravers' hands. They are notable examples of the pictorial treatment of commercial work without obliterating the commercial utility of the work, and we commend them to those who have to deal with this class of subjects as worthy of analysis and study.

PHOTOGRAPHS ON WATCH CAPS, LIDS, AND DIALS IN SILVER AND CARBON.

Practical Instructions with Working Formulæ.

(Concluded from page 171.)

BY A. J. JARMAN.

In the two preceding papers of this series we have learned how to produce photographs in silver on the caps, lids, or dials of watches and similar articles. In this paper the instructions given will cover the production of the same class of pictures in carbon. The process to be described is that in general use by commercial photographers who undertake this work for the trade, and can be relied upon as thoroughly practical for its purpose. The pictures so produced are, of course, permanent and indestructible.

Like all good photographic work it demands care, and skill is attained only by perseverance and experience.

The carbon tissue best adapted for this method is that known as Lambertype purple. Warm-black, brown-black, and engraving-black tissues are also used, but Lambertype purple gives the most pleasing results. We will require several enamelled iron trays about 12 inches square, and an additional tray 12 x 16 inches.

Having procured a supply of carbon tissue of the color desired, cut it up into pieces 8 x 10 inches, and store it under heavy pressure in a printing-frame until required for use. It is well to have the printing-frame fitted with a piece of plate-glass, or two thicknesses of ordinary glass, to permit of strong pressure.

The sensitizing solution is made up as follows:

Bichromate of Potash (recrystallized)	2 ounces.
Ammonia Carbonate	40 grains.
Water (filtered or boiled)	50 ounces.

When complete solution has been obtained, add:

Salicylic Acid	40 grains.
Hot Water	4 ounces.
Glycerine	30 drops.

Mix the combined solution thoroughly, filter, and allow it to stand for several hours before use. When ready to sensitize the tissue pour the sensitizing solution into one of the enamelled trays, and immerse one piece of the tissue completely in the solution. It is advisable to wear rubber gloves or stout finger-tips when sensitizing carbon tissue, as the bichromate attacks the skin about the finger-nails, and is apt to produce troublesome sores with some people. The sensitizing should be done in a room

where the windows are screened with orange or yellow paper or fabric (not ruby). As soon as the tissue is thoroughly immersed, remove with a match-stick or finger-tip any air-bubbles which appear on the surface of the tissue. Turn the tissue face down in the solution, and rock the tray to prevent the tissue adhering to the bottom of the dish. Allow it to soak for three minutes, then remove it by two corners, drain off the excess of sensitizing solution, and lay it face down upon a perfectly clean sheet of glass 14 x 17 inches. Now carefully wipe off any excess of solution from the back of the tissue, using a squeegee for this purpose, and commencing at one end of the paper with slight pressure and employing a pushing movement. Now repeat this operation, beginning at the opposite end of the paper and employing a drawing movement. The object of this squeegeeing is to remove all superfluous solution, and give a flat, even surface to the tissue. Finally, wipe the back of the tissue dry with a piece of clean dish-rag.

Lift the tissue by the two top corners, grip these with two wooden clips, and suspend the now sensitized tissue to dry in a clean, dry room or closet free from dust and white light, because when the tissue is dry it is very sensitive to light. Several sheets may be treated in this way. When dry keep the sensitive tissue flat under pressure in a printing-frame, as already described, but taking the precaution to cover the front of the printing-frame with two thicknesses of black paper.

When sensitizing is completed, filter the sensitizing solution back into a suitable bottle, and keep this away from the light. It can be used half a dozen times if desired, after which it should be thrown away, and a new solution prepared for use. Tissue prepared as above described will keep in perfect condition for two weeks, but not longer.

The negative required must be a reversed negative because the single transfer is used, the print being developed direct upon the watch dial, cap, or lid, as the case may be. Having decided upon the size of the picture desired (let us suppose the watch cap to be decorated is 1½ inches in diameter), take a pair of compasses, with a lead-pencil as one of the legs, and describe a circle on a piece of orange or black paper (slightly smaller in size than the watch cap), and attach this with gum to the front or glass side of the negative with careful adjustment. Now cut a second mask, the diameter of which is 1½ inches, place this on the film side of the negative, so that it will allow an even circular edging to be seen upon looking through from the glass side of the negative with the smaller mask in front. Attach this second mask in its place with a touch of gum. This circular edging is of importance, as it forms what is known as a safe edge.

Now fit the negative upon a piece of clean, selected glass, say 4 x 5 inches, so as to occupy the centre of the glass, and hold it to its place with pieces of gummed paper. If any vignetting is to be done, let this be done on the outside of the glass plate which holds the negative, by stumping in with Gihon's opaque or Strauss' marl. Proceed to cut a disk of sensitized tissue, in orange light, of course, using a cardboard disk which just fits the smaller of the two circles as a gauge. Be sure to mark the figure T at the top of the piece of tissue where the head of the figure comes. Mark the top of the mask in the same way. In this way you will know how to attach the exposed tissue on the dial or cap for development, otherwise the portrait might be upside down. Bear in mind, also, that the hinge of the watch cap must be kept to the left hand, as the majority of watch caps are so fitted to their cases. The top is thus easily ascertained.

Having fitted the tissue in place on the negative in the printing-frame, close the frame with its felt pad, take another printing-frame carrying a second negative similar in character to the miniature negative with a piece of ordinary silver paper in contact, and put both negatives out to print together. After a few minutes take both printing-frames into the room with the orange light and examine the progress of the silver print (not the carbon print). If it is about one-third done, the carbon print has had sufficient exposure. If not, place both frames out in the light again and complete the printing.

When the carbon tissue has had suffi-

cient exposure proceed as follows: Make up a solution of

White Sugar	2 ounces.
Water	4 "

When the sugar is completely dissolved, filter the solution and pour it into a small porcelain tray or pie-dish. Take the matted watch cap (after cleaning in lye and washing as described in the second article) and immerse it in the sugar solution. Next immerse the exposed carbon tissue completely in a second small dish filled with water. When the tissue lies limp and flat, remove it from the water and dip the cap and tissue together in the sugar solution. Pass the tissue carefully over the cap and see that the mark T is at the top and the hinge to the left hand. Now gently press the tissue into contact with the cap, using the thumbs of both hands for this purpose. Place the cap upon a piece of blotting paper and in its hollow put a piece of thin India-rubber cloth. Gently stroke the cloth with an ordinary rubber eraser, using it as a small squeegee to secure perfect contact between the exposed tissue and the surface of the cap. This operation requires care and patience. The cloth should be stroked from the centre outward, the cap being turned round gradually so that all moisture and air are excluded from between the cap and the tissue. When perfect contact has been secured at every point let the cap rest for twenty minutes, after which development may be proceeded with. To develop the carbon image take one of the enamelled trays, fill it half full of warm water, not hotter than 120° F., immerse the cap and allow it to soak until the pigment or color oozes out from beneath the tissue. Now gently lift one corner of the tissue, always handling it under the water, and when it all comes off throw it away. Take the cap in the right hand and lave it to-and-fro in the warm water until the image begins to appear. In a very short time, if the exposure has been correct, the excess of pigment or coloring matter will wash away and the portrait will reveal itself. When it has completely cleared and the print is seen to be satisfactory rinse it in cold water and immerse it in a solution of common alum, 1 ounce, in 50 ounces of water previously dissolved. Allow the print to soak in this alum bath for three minutes, remove and wash in clear water for five minutes, and then stand the cap and its picture aside to dry on a piece of blotting paper.

When the picture is thoroughly dry attend to any spotting that may be required, coat it with albaline, drain well, and dry by the aid of gentle heat.

The gold cap and its picture are now complete and ready to be attached to the remainder of the watch case. If these directions are carefully followed by any one who has even a slight acquaintance with the carbon process, there should be no failures. The reader should be cautioned not to use chrome alum for the alum bath after development, as this hardens the gelatine too much and in time the portrait might split or crack and peal off. A 2 per cent. solution of common white alum is all that is necessary.

If the lid of the watch case is used instead of the cap, the surface is, of course, convex instead of concave. The method of attaching the carbon tissue is the same, only care and patient handling being required to get contact.

The albaline mentioned is sometimes called crystalline. It is a celluloid varnish, practically a solution of gun-cotton in amyl acetate thinned down with amyl alcohol. For the purpose mentioned it surpasses collodion or other varnishes.

GLASS POSITIVES ON DRY PLATES.

REPLYING to a correspondent in the *British Journal of Photography*, who desired a practical process for making positives on dry plates, somewhat similar to the old-style collodion positive popular years ago, Mr. J. T. Hackett gives the subjoined method. For convenience of reference I have arranged the different operations, etc., under separate headings, viz.:

Plates. Any speed and make of gelatino-bromide dry plate are suitable, provided that they work perfectly free from stain of

all kinds and fog. I like plates that are rather thinly coated, and those that develop and fix quickly are to be preferred. The Ilford ordinary, or plates of similar speed, are usually quite fast enough for the above purpose, but those of greater speed can be used if necessary or desired.

Exposure. The exposure need not be more than about half to one-third as much as that required for a negative of the same subject under similar conditions, but the exposure must not exceed that necessary for a negative.

Developers and Development. The development of the plate is the most critical operation that has to be undertaken. I have found that almost any developer is suitable that does not stain the film, produce fog, or give too much density. For this reason the developer must not be more than from one-third to one-fourth as strong (or even weaker, when some developing agents are employed) as that required for negative work. But as the following formula works very well in my hands and does not stain or fog the film I can recommend it with confidence:

No. 1 Stock Solution.

Distilled Water . . .	20 ounces.
Neutral Oxalate of Potash .	6 "
Bromide of Potassium . .	6 grains.

Oxalic Acid—enough to make the solution slightly acid to blue test paper.

This solution keeps well.

No. 2 Stock Solution.

Distilled Water . . .	4 ounces.
Sulphuric Acid (or Citric Acid), enough to make the water slightly acid.	
Protosulphate of Iron . .	1 ounce.

This solution does not keep well, so it should be mixed fresh every day if possible.

To develop mix just before use:

No. 1 Stock Solution . .	8 drachms.
No. 2 Stock Solution . .	1 drachm.

The above suits many plates, but if less density is required use more of No. 1, and if more density is necessary use more of No. 2. The same developer can be employed for two or more plates if used within about half an hour of being mixed.

The development is generally very rapid, as the image usually begins to appear in from twenty to thirty seconds, and development is completed in from sixty to ninety seconds if the exposure has been correct or nearly so.

The development must be stopped the moment all the details in the shadows that are desired in the finished picture are visible by reflected light—*i. e.*, when looking down upon the plate, as only very slight density is required. To stop development the plate must be rinsed quickly, with two or three different portions of the following (or some similar) acid solution, in order to remove the developer from the film, and then well rinse the plate in clean water and fix in some good acid fixing bath, such as that given below, or the A. G. F. A. acid fixing salt or some similar preparation sold for that purpose.

Acid Solution.

Distilled Water . . .	50 ounces.
Hydrochloric or Sulphuric Acid	½ ounce.

Acid Fixing Bath.

Distilled Water . . .	40 ounces.
Hyposulphite of Soda . .	8 "
Metabisulphite of Potash . .	1 ounce.

If the film tends to frill in the acid bath add the acid to a saturated solution of chloride of sodium instead of using plain water.

Light for the Dark Room. For this purpose I use a night-light paraffin lamp in a lantern having one thickness of canary fabric between two thicknesses of colorless glass, which gives a light of the right color for seeing clearly the proper time to stop the development. And if the plates are changed at a suitable distance from the light, say two or three feet, they will not get fogged. The development can be conducted within six to twelve inches from the light with safety. After fixing wash the plate as well as time will permit, and then bleach (or whiten) it in the following solution:

Bleaching or Whitening Solution.

Distilled Water . . .	10 ounces.
Chloride of Ammonium (or of Sodium)	4 drachms.
Bichloride of Mercury . .	4 "

The image will be bleached through to the glass in about three minutes or less in warm weather, but takes longer in cold

weather, and will be quite white enough to please any one, and will be far whiter than most collodion glass positives are.

It is now well washed, dried, and varnished with a colorless negative or tinted positive varnish, according to taste. This will tend to improve their appearance and render them much more permanent than they otherwise would be.

Note. The more thoroughly the pictures are washed after developing, fixing, and bleaching the more permanent they are likely to be. They also appear to retain their color—*i. e.*, whiteness, longer when they are kept in a dry place and in the dark than when they are exposed to strong actinic light; but, of course, their color can be restored by removing the varnish and bleaching them again. I have some twelve months old that are as good as when first made, so when well washed, etc., they are likely to be quite permanent enough for all practical purposes, but cannot equal those by the wet collodion process in this respect; some of these I have are forty years old and are as good now as the day they were produced.

Backing up the Pictures. Black or maroon cotton, or silk velvet, or velveteen is the best possible material to back up the pictures with. If black varnish is used the picture will be ruined.

Defects in Pictures. If the pictures are flat it is probably due to over-exposure, over-development, or using too much of No. 2 solution in the developer, or to fog. Pictures devoid of detail in the high lights and deep shadows are due to under-exposure, over-development, and perhaps to too much of No. 2 in the developer, or a combination of the above causes may lead to the defects mentioned.

The kind of image necessary will look extremely thin (*i. e.*, a mere ghost) when viewed by transmitted light, after fixing and before bleaching; very much thinner than an ordinary negative would look. But the bichloride of mercury solution not only bleaches or whitens the image, but also intensifies it more or less.

LET THEM KNOW.

BY F. E. GATCHEL.

One of the business methods that has reached proportions that are so enormous that it is impossible to even approximate the figures is advertising—making the people know what you want them to know. Bringing to their attention facts that they would not otherwise take the trouble to notice and certainly not remember.

The advertising bills of some of the large patent medicines or breakfast foods would make the ordinary advertiser gasp, and yet the men who do this become millionaires.

We do not mean to infer that every one who begins to advertise wisely will become a millionaire, but we merely use this assertion as a sound basis for arguing that the principle is correct, and that the wisdom is in the application of it. When any one has a new article, as in the photograph business, a new card or a new style of picture, it is necessary to let them know that you have it. This kind of advertising is receiving more attention now than it has ever before, and Mr. W. I. Scandlin, of Brooklyn, is making a business of writing attractive advertisements for photographers, and if he succeeds in making money for a few of his patrons he will without doubt be given plenty of work to do, and the effect will be wholesome all around. But every man can do a certain amount of advertising for himself, and he should learn how to do it to the best advantage. For instance, many photographers wish to leave their galleries for a short period, and when they do they take it for granted that the public does not care where they have gone or how long they will be away, and if some one is disappointed unfavorable reports get around and it hurts business very much. But if there is a good and sufficient reason for going, and due notice is given the public that you will be absent from your place of business on certain dates, even if they do not want pictures, they will notice the

courtesy and will have a favorable impression of the gallery.

At the time of the conventions a large number of photographers will close their galleries altogether or leave some one in charge who is more or less incompetent, and very likely a large proportion will forget to let people know of the condition of affairs, and customers will have to come to the gallery to find out that the proprietor, who is the only man who can make the work, is away. The shrewd photographer will let the public know that he is going to the convention, and that he expects to come back with new ideas in photographs, and will be glad to demonstrate this to all customers. This will have the effect of attracting attention to him and his work, and people will come into the gallery that might never come unless this attention was called to it. It will be a very inexpensive way of advertising and is well worth trying. If you go to conventions make them pay just as much as it is possible to. Get all that can be gotten, both at the hall and at your home, and you will find that the public will show its interest and appreciation if you will only let them know.—*Trade News.*

BROWN TONES ON BROMIDE PRINTS.

BY R. H. A.

MUCH has of late been written and said on the question of obtaining a satisfactory brown tone on bromide paper. Photographers will nowadays have nice framed enlargements of their favorite negatives, and as bromide paper is so easy to use and brown tones are in fashion, various means of toning the prints brown are adopted. There are, in my opinion, no "bromide browns" to equal the rich brown of a carbon print, or any "bromide sepias" to equal the rich sepias of a platinum print, but they are not far behind, and it frequently takes a very clever man and an expert to tell at a glance whether a print be a toned bromide, sepia platinum, or a carbon.

I have tried every bath and process I know of for securing brown bromides, but it was not until about three months ago that a friend gave me details of a process which I now use in preference to all others. It may, however, be a process as old as the hills, but although the exact formula was given me I have departed slightly from it, and use what I consider a better one. It may, scientifically speaking, be a worse one, and may spoil the keeping qualities of the finished print, as indeed may any print be impaired by any process of toning, but that does not concern me. The prints when toned are of a beautiful brown, a shade I have been trying to get for some time, and it is early yet to speak definitely of the keeping qualities, but I see no reason why the prints should fade, at any rate for a few years, and that is quite long enough for some to keep their pristine beauty (?).

Before adopting this newer method of toning my bromide prints I strongly advocated the hypo and alum bath, which always worked very well indeed in my hands, more especially if the bath was an old one. Bnt let us return to my new love.

It consists of two solutions, which I call A and B. A is the bleacher, and B the actual toner. A is simply a solution of common bleaching powder. ("The so-called chloride of lime of the shops, the active ingredient of which is probably calcium hypochlorite, and this in contact with acids liberates the powerfully oxidizing hypochlorous acid."—Wall's *Dictionary of Photography.*) This may be bought very cheaply indeed. Washerwomen, I am told, use it for the purpose of getting linen white and for burning holes in dress shirts. I take about 20 grs. of this powder and dissolve in four ozs. of water. Hydrochloric or muriatic acid (sometimes called spirit of salts) was given in the original formula in the proportion of 1 minim to 1 gr. of bleaching powder, but this I found had a softening effect on the film. What I prefer is a little alum in place of of the acid. This prevents the prints frilling in the process of bleaching, and

at the same time liberates the necessary chlorine. The solution must be carefully filtered to clear it of the sediment.

The B solution is made by dissolving 10 grs. of pure sodium sulphide in 1 oz. of water, or larger quantities in the same proportion. To this solution a few drops of hydrochloric acid should be added, or just enough to turn blue litmus paper red. I may as well say before I go any further that it is next to impossible to use this solution in the house, for the smell is terrible. I always lift up the window and set the tray or bottle containing it on the window-ledge outside, and "brown" the prints there.

Having made the two solutions, the developed, fixed, and washed prints are placed in the A solution until they are bleached quite white and it is impossible to tell on which side of the paper the image is—or was. They are then washed for a few minutes and placed in the dish containing solution B outside the window, or in the room as the case may be, until the image has become a nice brown color. The prints are then washed for a short time and dried as usual.

The whole process does not take ten minutes, the action of the baths is very even, and altogether it is a process to be highly commended for those who want a quick and certain method of securing brown bromides. I may say that I have found no intensifying action; the only difference—if any—is that it appears to "clear up" the image and give juicy shadows. In concluding I might add that the A solution keeps well in a stoppered bottle, and the B solution is best made just before using; it is not advisable, however, to use the latter more than once or twice, as the tones are not so good.—*Photographic News.*

THE PHOTOGRAPHIC REGISTRATION OF TONES IN THEIR DUE RATIO.*

BY CHARLES TRUSCOTT.

"THE Road to Protection" is long and sometimes arduous, especially to those who are in a hurry, but to those who do not expect to quite catch up with their ideals and are content to take one step at a time (and sometimes even to turn back and make a fresh start) the travelling is fairly good. The perfecting or mastering of a process or machine cannot be done in a day or even a year. We should not be discouraged permanently, but keep pushing on, satisfied if some progress is made each day, however little, feeling assured that some measure of success will be ours.

The camera is undoubtedly an instrument of precision, and no draughtsman however gifted can ever hope to begin to approach it in accuracy of drawing, correctness of perspective, or ability to delineate detail. When, however, it comes to the registration of color and tone values, photographic processes are not nearly as perfect.

In proof of this statement let me call your attention to one or two points. You are all familiar with the fact that a photograph of a photograph is never quite equal to the original; we recognize it at once as "a copy." Now, if the chemical side of photography were as perfect as the optical this would not be. We should be able to copy a copy of a copy many times, and the last ought to be as good as the first. But we know it never is. There will be a slight loss each time, and the sum of these losses will be appalling. This loss is most evident in the lightest tones, which we call the "high lights." That is to say, the highest light and the next highest light are rendered the same in value, and the distinction between the two is lost, and we recognize it at once as "a copy." No matter how carefully the copy is made there is always some evidence of this flattening or degrading of the high lights.

This being a matter of first importance, I have thought it worth while investigating this serious defect, and also of bringing the subject to your attention.

In the first place, let it be observed that

*A paper read before the March meeting of the Photographic Society of Philadelphia.

this defect is common alike to both wet and dry plates, to collodion and gelatine, that it is decreased by a minimum exposure and increased by a maximum exposure; that a fully printed print from a soft negative will copy with less flattening of the high lights than a rather light print from a strong negative.

This fault appears to rise from two causes: first, the near approach to the saturation or solarization point in the negative; and, second, the incapacity of the printing processes to register the lighter tones correctly, and I find this latter cause occasions much the greater loss.

Several years ago the speaker had occasion to need a screen of tones in accurately graded ratio, each tone or print to be of a decided and distinct difference from its neighbor. What more natural than to wish to make such a screen by photography? The ratio found to answer the purpose was an increase of each step or tone of 50 per cent., and for some reason not now apparent he decided on twenty steps or tones; but it is one thing to decide on what you want and quite another to obtain it. Nothing of the kind was purchasable, so it had to be made—but how? Well, it seems a very simple matter to make a sensitive plate or a piece of sensitive paper and expose to a constant light different parts of the surface for any proportionate time desired.

What could be more simple? I do not know if any of my audience have experimented in this direction. If they have they will have found that when we get about ten tints or steps we have reached the limit of the registering capacity of every printing out or developing paper or plate known to photography, and have only one-sixtieth of the capacity necessary to register the twenty tints desired. We will also find that the tints both at the dark and light end are incorrectly registered.

There is, however, one sensitive surface that is neither a developing nor printing out material, which is not only equal to the occasion, that will not only register correctly all the hundreds of octaves necessary for this purpose, but the speaker has not been able as yet to reach the limit, although he has exposed a whole day of continuous sunshine. The sensitive material referred to is bichromated gelatine—the only sensitive material that cannot be solarized; the only material which appears to have no limit to its capacity for registering tones correctly and giving, when combined with pigment, a correct register of all the tones in the negative.

The screen referred to is now exhibited for the first time in public, although made more than twenty years ago. The exposure of the darkest tone was more than three thousand times that of the light tone. A positive made from this negative is also shown, the light tints being of course printed from the dark tints of the negative, and yet placed side by side you cannot tell one from the other. The perfection of this screen is simply marvellous.

Another unique screen is also shown, consisting of 440 squares, which was made by transferring two of the above positives to glass and mounting them at right angles to each other. This screen could be used to register a month's continuous sunshine.

This ability of bichromated gelatine to register tones in correct relation to an unlimited extent having been known to us very many years, it is rather surprising it was not turned to account long ago.

Pondering on this subject about a year ago, and by a pure process of reason, it became apparent (we refer, of course, to the speaker) that the best methods of making enlarged negatives known to the text-books did not include the use of this perfect process in a way to secure the most perfect results.

If you wish to reproduce a negative the size of the original and want a negative equal to the original, you should by all means make a contact positive on pigmented gelatine, and the negative in the same manner from the positive, no dry plate or wet plate being used in either case, and the probability is that if this process were repeated a thousand times, the last negative as far as the accurate registration of tones is concerned, would be equal to the original.

But suppose we are required to make the most perfect enlarged negative from a small one by pure photographic process that it is possible to make, how will we proceed? It pays to plan all work before we begin;

sometimes the work is half done when well planned.

It is evident either the positive or the negative must be made in the camera, and as bichromated gelatine is much too insensitive for use in the camera, it follows that only one can be made by this perfect process. The important question now to be decided is, which one? The authorities all tell you to make a contact positive on transparency tissue. Let us see if this is the best procedure. As the high light and delicate tones are the most valuable part especially of a portrait negative and the part where the greatest loss always occurs, and as we have seen the dry and wet plate are both incapable of rendering the lighter and therefore more fully exposed portions, it would appear that by all means where they cannot be both so made, the negative and not the positive should be made on pigmented gelatine.

If you do not by this process obtain a reproduced negative equal in all respects to the original, and that too without any retouching of the high lights, you may rest assured that the fault is with you rather than with the process.

The same principle applies also to the making of the print. There is only one printing process which is capable of giving all that is in the negative without any loss whatever, and that is this same pigmented gelatine, commonly called the carbon process, which is at once the most facile, beautiful, permanent, and perfect process known to the photographer at the present time.

A LETTER OF WARNING.

THE following letter, received from a subscriber, will doubtless be welcomed by some of our readers who have suffered from the scheme sharks:

"Do not be deceived by these smooth-tongued agents who come to your studio representing check schemes whereby you can increase your business fourfold. They do not tell you, but it means increasing your stock-bills fourfold—your cash receipts only a little. Many a photographer is taken in because he wants to do a big business, and does not realize that a big business of one to five thousand free sittings does not pay. The schemes are very profitable to the customer and the agent reaps a rich harvest, but the photographer is the loser.

"The schemes vary in detail, but are the same in general principle. A check with coupons attached gives the holder six cabinets free, or for a very small charge. The other four or five coupons are supposed to be given away to friends, and each entitles the holder to a dozen six- or seven-dollar cabinets for three or four dollars. The agent sells these coupon tickets for fifty cents, and as he usually sells from two to five thousand in a town, makes a profit of from one thousand to twenty-five hundred dollars. He works the town in about two or three weeks, because the tickets sell as fast as he can hand them out, particularly if the photographer, whose name appears on them, is well known. He gets his work done quickly and gets out of town, very often not leaving his address, before the many false statements he has made get to the studio and trouble begins.

"Nearly all the free tickets will be presented at your studio, you may be sure, but of the others less than one-tenth will ever be heard from. Most of these latter sittings come from people who want pictures, and without the coupon would pay six or seven dollars. This simply means cutting prices and cheapening your work in the eyes of the public, which no photographer who would be successful can afford to do.

"The agent tells you that it brings people into your studio, where you can show them better work, and that you will receive many re-orders. In some measure this is true, but—and the point is here—the people who take advantage of your advertising scheme of free pictures are people of small means, as a rule, and they have not money to spend for pictures. To be sure, they may order them, but, unless you get cash with the order, you may expect to keep them on your shelves a long time.

"There is another scheme which is profitable for the agent. He makes arrangements between a photographer and some merchants or provision dealers to issue a coupon, which the latter shall give to customers, to be punched with the amounts of their purchases. When these have amounted to five dollars the coupon is presented to the photographer, who makes the person six cabinets or one large picture for one dollar. The agent receives a commission in this case from both photographer and merchants.

"There is no advantage in this to the photographer. In order to profit by the transaction he must work each customer for all he or she is worth. The method soon becomes known and the photographer's reputation suffers.

"In some cases, when describing the scheme to the photographer, the agent makes a strong point of the fact that if the former does not adopt the scheme one of the other photographers in town will, as they are already very anxious to do so. In some towns the photographers have united against all such schemes, with beneficial results to all parties.

"A BROTHER PHOTOGRAPHER."

PRACTICAL POINTS ABOUT LENSES.*

1. THE definition of a "lens."
   "A piece, or series of pieces, of transparent media (glass), the surfaces of which are always portions of spheres."
2. The function of a lens.
   "To project a picture of external objects upon a sensitive surface within the camera."
3. This image is inverted.
4. A pinhole is unsuitable, because—
   (*a*) It has no rapidity.
   (*b*) It is incapable of giving sharp definition.
5. The aim of the optician is to produce a lens having the following properties. If this were possible an ideal lens would result. They are:
   (*a*) No focus.
   (*b*) Infinite rapidity.
   (*c*) Infinite depth.
   (*d*) Infinite covering power.
   (*e*) No distortion.
   (*f*) Perfect illumination.
   (*g*) All the light striking the first surface of the lens, to be utilized in forming the image.
   (*h*) A perfectly flat field.
   (*i*) Perfect sharpness.
6. Every good lens should have properties *e*, *f*, *g*, *h*, and *i*, but the most suitable focus, rapidity, depth, and covering power may be selected.
7. Practically all lenses are made of glass in some form or other.
8. Glass possesses five distinct properties of great importance:
   (*a*) Refracting power (refractive index).
   (*b*) Dispersive power (in relation to color).
   (*c*) Stability under varying atmospheric conditions.
   (*d*) Color of the glass.
   (*e*) Physical defects.
9. Refractive power is the quality which glass possesses of bending light passing from a dense medium into a less dense, and *vice versa*.
10. Dispersive power is the quality which glass has of breaking light up into its primary colors.
11. Refractive and dispersive powers vary independently in different kinds of glass.
12. Refractive and dispersive powers are affected by the composition of the glass.
13. The physical defects must be avoided, as, with the exception of "bubbles," they damage the quality of a lens. They are striæ, strain, scratches, chips, etc.
14. The presence of color means the loss of light.
15. The loss of light means the loss of rapidity.
16. The presence of bubbles is of no importance.

* Extracted from "Photographic Lenses: A Simple Treatise." By Conrad Beck and H. Andrews. 228 pp.; illustrated. Tennant & Ward, New York.

17. The processes of manufacture are grinding, polishing, figuring, centring, mounting, testing.

18. All these processes must be most skilfully carried out to produce the best work.

19. A simple lens does not fulfil all requirements.

20. A lens should faithfully reproduce every point of the object in the picture.

21. To do so it must be corrected for:

(*a*) Chromatic aberration.
(*b*) Spherical aberration.
(*c*) Astigmatism (radial and tangential).
(*d*) Curvature of the focal surface.
(*e*) Distortion.

22. Chromatic aberration is caused by the inability of a lens to converge rays of white light coming from an illuminated point to a similar point in the image.

23. A simple single lens is non-achromatic.

24. A lens made of two glasses can be entirely achromatized for two colors, the others being almost corrected.

25. A lens of more than two glasses can be entirely corrected for three colors, the other colors being so slightly uncorrected that the result is practically perfect.

26. It is by combining lenses with different dispersive powers that this correction is effected.

27. A non-achromatic lens is said to have a chemical focus.

28. Spherical aberration is due to the use of spherical surfaces.

29. It is the inability of a lens to convey the marginal rays to a point at the same distance from the lens as the central ones.

30. When spherical aberration is present a point is represented by a circle and not by a point.

31. If this circle be more than 1-100 of an inch in diameter, the lens is badly corrected.

32. Astigmatism is an error of the oblique rays.

33. Where astigmatism is present the rays, instead of being brought to one focal point, are brought to two focal lines.

34. The distance between these lines is the measure of the astigmatism.

35. A point midway between these lines gives the position of the circles of least confusion.

36. Lenses which are particularly free from this error are called orthostigmatic or anastigmatic.

37. Curvature of field is the error caused by the focal plane being curved instead of flat.

38. Distortion due to the lens causes straight lines in the object to be reproduced as curved lines in the image.

39. There are two kinds of distortion, known as barrel and pincushion.

40. All single lenses are subject to some degree of distortion.

41. This error is often overcome by combining two lenses which possess the error to an equal and opposite extent.

42. The position of the stop influences the amount and kind of the distortion.

43. Flare is caused by the presence of extraneous light in the camera which does not take part in the image formation.

44. Flare spot is the concentration of this light within confined limits.

45. The greater the number of "air" surfaces the greater is the danger of flare.

46. The presence of flare makes itself known in milkiness and lack of brilliancy in the picture.

47. The properties bearing on the use of a lens are:

Focus.
Rapidity.
Depth of focus.
Brilliancy of definition.
Angle of view.
Equality of illumination.
Absorption, reflection, and scattering of light.
Area of critical definition.

48. The focal length of a lens is the measure of its refracting power and of the size of the image it will produce.

49. This length can be chosen to suit any set of circumstances.

50. This length is about the distance of the diaphragm of a rectilinear, or the back surface of a single-view lens from the ground glass when objects at a great distance are in focus.

51. By depth of focus is meant the power of a lens to sharply depict more than one plane of the view upon the plate.

52. By "sharply" is meant that a point

in the object is represented by a circle in the image not more than 1-100 inch in diameter.

53. There are three factors governing the amount of depth of focus. They are:

(*a*) The focal length of the lens.

(*b*) The aperture of the lens.

(*c*) The amount of spherical aberration present.

54. The shorter the focus the more the depth of definition.

55. The smaller the aperture the greater the depth.

56. The presence of a little spherical aberration means an increase in depth of definition.

57. A lens possesses rapidity; a pinhole does not.

58. With two lenses of the same focus, the one with the largest aperture will be the most rapid.

59. Rapidity is written as the diameter of the effective aperture divided into the focal length.

60. Brilliancy of definition means black must be black and white white, but neither gray.

61. The fewer the reflecting surfaces the better is the brilliancy.

62. Only those surfaces that are not cemented count.

63. The worse the polish the less the brilliancy.

64. That part of the picture that is sharp is known as the area of critical definition.

65. The better the quality of the lens the larger this area.

66. The smaller the stop the larger the area of critical definition.

67. The longer the focus of the lens the larger the area.

68. The modern orthostigmat (anastigmat) has a larger area of definition in proportion to its focus than any other type of lens at the same aperture.

69. If a lens illuminates the edges of the field as brilliantly as the centre, the illumination is perfect.

70. No lens does this absolutely.

71. The farther apart the lenses of a doublet the worse the illumination.

72. The larger the lenses in proportion to the diaphragm the better the illumination.

(To be continued.)

THE WISCONSIN CONVENTION.

THE Seventh Annual Convention of the Photographers' Association of Wisconsin opened April 28th with a reception of the members and visitors from other associations. The Exposition Art Galleries had been carefully arranged for the Convention, and the exhibits put in place the day before the opening.

About three hundred pictures were exhibited by the following members of the Association: H. A. Lyman, E. D. Froutschy, A. A. Bish, C. E. Wright, B. J. Brown, Klein & Guttenstein, Rice & Fromm, J. C. Dawson, J. H. Field, J. M. Bandtel, C. P. Ziegler, C. J. Van Tassel, A. E. Taylor, A. C. Isaacs, W. R. Bardeen, C. Krueger & Co., H. G. Clizbe, H. S. Miller, C. W. Panzer, J. E. H. Stimson, M. Landberg, H. C. Watton, W. A. Pryor, R. H. Barlow, E. G. La Piere, and J. E. Jones.

Complimentary exhibits were received from J. R. Snow, Mankato, Minn.; J. A. Gunderson, Winona, Minn.; S. L. Stein, Milwaukee, Wis.; W. N. Brenner, Cincinnati, Ohio, and Thuss, of Louisville, Ky.

The Interstate exhibit contained one picture from each of eleven States. The following State associations were represented: Oklahoma Territory and Indian Territory by 5 pictures, Kentucky and Tennessee by 11, New England by 35, Missouri by 8, Indiana by 9, Pennsylvania, Maryland, Delaware, and Virginia by 10. Pacific N. W. by 11, Iowa by 3, Texas by 10, Northwestern by 13, P. A. of Wisconsin exhibit of 1902, 28 pictures.

The first work of the Convention was a demonstration in posing and lighting in the northeast room of the Art Gallery, Mr. Guttenstein being in charge; after which the first business session was called to order by President Miller at 3.15 P.M.

The reading of the minutes of the previous Convention was dispensed with, as they had been published in the photographic magazines and were approved as printed. Communications were received and read as follows: From Morris Burke Parkinson, President New England Association; J. A. Gunderson, Secretary Northwestern Association; Milton Loryea, Secretary Pacific Northwestern Association; R. I. Spafford, Secretary P. A. of Illinois; also from Charles W. Hearn, Boston, Mass., regarding a movement which had been started at the National Convention in 1902, having for its object a closer union of the State associations and their working in harmony with one another and with the national associations. This subject was discussed by Mr. Kline and others at a meeting held at the Genesee Hotel in Buffalo, the meeting having been brought about by the Secretary of the Wisconsin Association wishing to meet and become acquainted with the secretaries and other officers of the various State associations for the purpose of exchanging ideas and discussing matters that would be helpful in association work. Mr. Hearn's communication was referred to Mr. Klein, to be brought up by him at a future meeting.

The report of the Finance Committee showed the Association to be in excellent financial condition.

J. A. Gunderson, of Winona, Minn., was appointed to act as judge, with instructions to select the best picture exhibited by a member of the Association for the Interstate Exhibit; also, to select about ten

pictures from the exhibits of members, to be placed in the "States Exchange" collection, to be sent to all the other conventions. Mr. H. E. Smith, who offered a cup called the "Smith Trophy," requested that the same judge decide which of the four exhibits entered in the "Trophy" class was entitled to the cup, and Mr. Gunderson was instructed accordingly.

A motion to elect Messrs. C. T. Shape and E. M. Katz to honorary membership was seconded and carried unanimously. A motion that the Secretary be instructed to notify Messrs. Shape and Katz of the action taken and to invite them to be present at the meetings was also seconded and carried and the Secretary so instructed.

At 7.30 P.M. Mr. F. K. Hart, of the Eastman Kodak Company, gave a demonstration in bromide enlarging. He illustrated a method by which photographers could use their dark rooms and ordinary front focus view cameras for daylight enlarging. He then made a number of enlargements by the use of a lantern with an oil burner. The demonstration was attended by about seventy members, who were greatly interested and asked many questions, which Mr. Hart answered and illustrated.

Wednesday, April 29th.

The business session was called to order at 11.15 A.M. The members were so much interested in the exhibits on the walls that routine business seemed a secondary matter, and the meeting room filled slowly.

The first order of business was the report of the nominating committee, which was as follows: We, the Nominating Committee, present the names of the following for officers of the Association for the ensuing year: For President we present the names of two gentlemen, each of whom has been active in furthering the interests of the Association, Messrs. E. A. Rice and B. C. Guttenstein, both of Milwaukee; for First Vice-President, E. C. Berryman, of West Superior; for Second Vice-President, V. Herman, of Calumet, Mich.; for Secretary, J. M. Bandtel, of Milwaukee; for Treasurer, W. J. Hillman, of Richland Center.

E. G. LA PIERE,
R. H. BARLOW,
A. A. BISH.

No further nominations being made, tellers were appointed and the Association proceeded to ballot for a President. Mr. Rice received 46 votes and Mr. Guttenstein 20. Mr. Rice was declared elected.

No further nominations being made for First Vice-President, it was moved and seconded that the nominations be closed and the Secretary instructed to cast the ballot of the Association for Mr. Berryman. The motion was carried and the Secretary cast the ballot and Mr. Berryman was declared elected. Similarly the Secretary cast the ballot and Mr. Herman was declared elected as Second Vice-President.

Certificates acknowledging the receipt and acceptance of exhibits for the Convention were then distributed to those who had sent some of their work to the Committee on Exhibits.

After the business session Messrs. Harry E. Smith and F. F. Hazelett made a demonstration in toning prints.

At 8 P.M. the members of the Association gathered in the banquet hall of the Republican Hotel, where Mr. F. Dundas Todd gave his illustrated lecture on "The Elementary Principles of Composition and Lighting." About one hundred members were present, and from the close attention given it was to be inferred that all were greatly interested and many expressed themselves as being well pleased and having received valuable instruction.

After the lecture Mr. George Traeumer gave an entertainment with a series of moving pictures.

Thursday, April 30th.

The morning session was called to order in the main room of the Art Gallery, as but a limited amount of business was to be attended to, and the criticisms on the pictures was to be taken up immediately after the session.

Communications were received from Messrs. C. T. Shape and E. M. Katz, who desired to thank the Association for their election to honorary membership, adding that they had been greatly interested in the success of the Association from its organization and that their best wishes were for its continued success.

The judge's report was then received, designating one portrait from each of the following exhibits to be entered in the "State Associations' Exchange" exhibit: Klein & Guttenstein, E. D. Froutschy, J. E. H. Stimson, J. H. Field, A. E. Taylor, W. A. Pryor, Rice & Fromm, C. E. Wright, Henry S. Miller, H. A. Lyman, A. A. Bish, H. C. Watton, R. H. Barlow, and E. G. La Piere, also recommending that two landscapes by J. H. Field and two by J. M. Bandtel be included in the exhibit, as they were a credit to the men who made them and to the Association.

Mr. Todd was then followed around the hall by a very interested group of members, who listened to his comments on the work exhibited, calling attention to the good points and suggesting improvements in the pictures chosen for criticism.

From 1 30 to 2.30 P.M. Mr. Guttenstein gave a demonstration in posing and lighting. This, as were all other demonstrations, was well attended by members anxious to learn.

At the afternoon session the Auditing Committee reported the accounts of the Association to be correct. A vote of thanks was tendered the retiring officers for their successful and satisfactory management of the Association's affairs for the year. Also to the management of the Republican Hotel for their kindness in giving the use of their banquet hall for the illustrated lecture. Also to Miss Traeumer for assisting the Treasurer in his duties during the Convention.

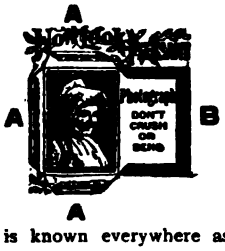
While busily engaged in attending to his duties the Secretary found himself suddenly surrounded by a committee of his friends, for which First Vice-President Guttenstein acted as spokesman, and was presented with a very handsome purse and advised to "put it in his pocket and say nothing." The latter part of the advice was very easily taken and followed at the time, as the Secretary was too much surprised to do otherwise; but since recovering somewhat he wishes to extend his sincere thanks to those who took part in the transaction. In the evening about one hundred and fifty members and their ladies were entertained at a theatre party at the Academy of Music.

The Convention was voted a grand success and one of the best ever held by a State association. All members expressed their satisfaction, and many declared that they "could not afford to miss it, as the educational and social features were well worth the time and expense of attending." The names of fifty-two active, nineteen associate, and two honorary members were added to the membership roll. The officers were quite proud of their Association, as the number of the exhibits, the high quality of the work, and the large attendance of both active and associate members indicated that it was one of the foremost of the State associations, and showed a wonderful growth in the last few years. Respectfully submitted,

J. M. BANDTEL, *Secretary.*

Milwaukee, Wis.

EDITOR'S TABLE.



THE little cut accompanying this note represents what is probably the most popular and widely-used of all photograph mailing envelopes, and the only specialty of its sort endorsed by the United States Postal Service. It is known everywhere as "Lavette's Patent Envelope," and is made in several sizes, from cabinet to 8¾ x 10¾. Any special sizes can be made to order in lots of one thousand. They offer obvious advantages over crudely cut pieces of cardboard or old boxes for mailing photographs, and many photographers supply them to their customers with every order at a handsome profit. Samples and prices can be had on application to H. C. LAVETTE, 232 Washington St., Chicago, Ill.

AMONG the troubles incident to the use of collodion matt papers the bronze iridescence which appears on shadows and high-lights is a constant difficulty to printers. Heretofore no remedy has been known, but we learn of a preparation called Anti-Bronze, which will remove this troublesome bronzing by simply rubbing on with a piece of flannel. Anti-Bronze is introduced by G. GENNERT, 24 East 13th St., New York, and a sample can be had for twenty-five cents, post-paid.

EXCURSION RATES TO THE OHIO-MICHIGAN PHOTOGRAPHERS' CONVENTION.—A rate of one and one-third fare on the certificate plan from all points in Ohio and Michigan has been secured for the Convention of the Photographers' Association of Ohio and Michigan, to be held July 22, 23, 24, 1903, in Saginaw.

Please observe the following directions: Tickets for the full fare for the going trip may be secured on and after July 17th up to and including July 23d. Tickets good returning from July 23d to July 28th, inclusive. Be sure, when purchasing your tickets going, that you call for a certificate. Do not make the mistake of asking for a receipt. Call at the station in good time for the agent to make out the certificate. Certificates are not kept at all stations. If you inquire of your agent you will find if he can supply them, and, if not, he will inform you of the nearest station where certificates can be had. You will purchase ticket to that place, and there get your certificate and ticket to Saginaw. Upon your arrival at the Convention, deposit your certificate with the Treasurer, D. D. Spellman, who will have it signed by the transportation agent and return it to you. A fee of 25 cents is charged by the agent for signing the certificates.

It has been arranged that the agent of the transportation company will be in attendance on July 23d to validate the certificates. Only on this day will the certificates be signed. When you wish to return present your certificate at the station and you will be furnished a ticket at one-third fare home. All steamboat lines will concur in the above rate. Parties in Ohio desiring can buy their tickets via steamer from Toledo, Sandusky or Cleveland to Detroit, and thence by rail to Saginaw.

All rail rates for the round trip are as follows:

Detroit,	to Saginaw, ...	$ 3 90
Grand Rapids,	"	4.55
St. Joseph,	"	6.50
Marquette,	"	16.05
Dayton, Ohio,	"	11.15
Cincinnati, Ohio,	"	13.40
Columbus, "	"	10.35
Toledo, "	"	5.40
Cleveland, "	"	9.75

Boat Rates.

Toledo via D. & C. Line to Detroit and rail to Saginaw, ...	$5.25
Cleveland via D. & C. Line to Detroit and rail to Saginaw, ...	6.25
Sandusky via steamer "Kirby" to Detroit, and rail to Saginaw, ...	5.70
Buffalo via D. & B. Line steamers to Detroit, and rail to Saginaw, ...	8.90

D. D. SPELLMAN,
Detroit, Mich.

INDIANA PHOTOGRAPHERS AND THE NATIONAL ASSOCIATION.—The following letter explains the attitude of the Indiana Association regarding the forthcoming convention, and will undoubtedly tend to the greater success of the gathering at Indianapolis next August:

To the Members of the Indiana Association of Photographers:

At the last Indiana Convention Winona Lake was selected as the place of holding the 1903 convention, but as the National Association voted to meet in Indiana this year a new situation had to be considered.

Can we hold a successful State Convention and

also do our duty toward the National Association? Can a majority of our members afford to attend two conventions this year; and if not, will it not be to the interest of our members to dispense with the State meeting and attend the National?

After carefully considering these questions the Executive Board has decided that it will be best not to hold a State Convention, and now ask the members to do all in their power to make the National Convention the largest and grandest ever held.

Indiana's exhibit will be hung separate as a State, and it is our fondest hope that every member will be represented with the best work they are capable of making. Do not wait; if you have not begun on your exhibit do so at once; don't put it off until the last week; decide now to be represented, and put your whole heart into the work.

The Indiana Orchestra has kindly tendered its services for the Convention, and this feature we know will be greatly appreciated by all in attendance. Show your appreciation of their sacrifice by doing your best to make the members of the National Association feel that Indiana is the most loyal State to which they can bring their meetings.

On Wednesday, August 5th, the Indiana Association will hold a meeting, and questions of the most vital character will be discussed at this meeting. It is important that every member be present; do not fail to be on hand. The exact time and place of this meeting will be announced at the meeting of the National Association on the day previous.

Indiana photographers, who are not members of the State organization, we invite and urge to join with us in extending to the photographers visiting our State the glad hand of fellowship. Come, help us in giving them a royal reception. Fraternally yours,

GEORGE J. PARROT,
President I. A. of P.

THE machine for printing photographs by the electric light, described on pages 168 and 169 of our last issue, has been put on the market by the KEYSTONE BLUE PAPER CO., 912 Filbert St., Philadelphia. We have seen this machine in operation, and cordially endorse the claims made by its manufacturers. Occupying a space only 3 x 3, the machine offers facilities for securing as many as 150 prints per hour; and it is adapted for use with all collodion and gelatine chloride, platinum, carbon, sepia, ferro-prussiate, and numerous other papers. The illumination is supplied by a single arc lamp, which is sufficient to print eight negatives, 11 x 14 inches, the machine being octagonal in form, each apartment receiving one of eight frames. It is needless to say that prints produced in this way are uniform in quality. In general, the time required for printing is one-third to one-half the time required with the brightest June sunlight. Doubtless this machine will become popular when its conveniences and merits are better known. An illustrated circular, giving full particulars, can be had from the manufacturers at the address given above, or from the CHICAGO BLUE PRINT PAPER CO., 160 Adams St., Chicago.

PROSCH SHUTTERS.—Prosch "Athlete" and "Triplex" shutters have been the old reliable favorites among professional photographers, newspaper men, lecturers, travellers, etc., during the past dozen or more years. The reason for this is their extreme range of speed and great illumination, in both of which features they possess more than double the working value of any other shutter located at the diaphragm. Their method of illumination in opening from the centre and closing to the centre again in one uninterrupted double pass-by movement, at the same time producing an opening shaped like a "V" upside down, which gives the foreground more exposure than the sky, is the only scientifically correct exposure for any shutter to give. All other shutters working at the diaphragm give, in a single pass-by movement, an exposure from one side to the other, or, as in the iris diaphragm type, an open-and-close movement, which practically cuts off over half of the proper amount of illumination. The double pass-by movement at the diaphragm, which is controlled entirely by the manufacturers of Prosch shutters, is the only one which gives at the same time all of the results desired by the practical photographer —that is, great range of speed, correct and full illumination, as well as great depth of focus.

The new Prosch shutter, the "Diaplane," possesses all of the popular features of the older models as well as several new ones, such as iris diaphragm in place of the revolving disk, a much wider range of speed, more compactness in size, and greater adaptability to hand cameras. This new shutter is the most perfect one ever offered by the PROSCH MANUFACTURING CO. It is made in two styles, which are distinguished as "Diaplane I." and "Diaplane II.," fully described in a circular recently received from the manufacturers, which our readers should see.

These shutters can be fitted to any lens or any camera, and they are capable of doing any class of work, from the simplest to the most exacting, that either the iris diaphragm or the focal-plane shutters are called upon to do. The speed markings for these shutters show actual time and not merely theoretical markings. Every Prosch shutter which leaves the factory is thoroughly tested for speed, and the indicated speeds are guaranteed.

PORTRAIT

By S. H. Lifshey, Brooklyn, N. Y.

WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XL. JUNE, 1903. No. 558.

THE INDIANAPOLIS CONVENTION.

THIS is the last call! All aboard for the National Convention, August 4th, 5th, 6th, and 7th! The photographer who stays at home this year will regret it but once, and that will be forever, *because* a favorable railroad rate has been secured, making it easy for all to be on hand; *because* this is without doubt going to be one of the grandest and best conventions in the history of the P. A. of A.; *because* everything has been done to make the meeting a rouser, and the entertainment features have been well looked after; *because* the H. Lieber Company is going to start the ball rolling on the opening night with a grand reception concert in the club garden, which will be one of the best things attempted up to now; be there on the first night to get the full benefit of the entire proceedings; *because* many hotels have given us very reasonable rates, and you will surely find something within your reach. Headquarters have been established at the new Claypool Hotel (one of the finest in this country), where we would like to see as many stop as possible; *because* it is up to you to help to keep the pace; so why not fall in line?

Fraternally yours,
GEO. G. HOLLOWAY,
Sec'y P. A. of A.

The many entries to the Art Exhibit for the coming Convention of the Photographers' Association of America indicate the success of the Indianapolis Convention, and show that the photographers are alive to the benefits that are derived from these meetings.

It is being recognized that photographic conventions have educated the public as well as the craftsmen, and every wide-awake man seems proud to assist in the work. This fact has been emphasized to my mind by the many very enthusiastic letters from all quarters. The public takes more and more interest with us each year, and have come to look upon the various associations as benefactors and consider the members as being up with the times. It is not, however, necessary to dwell on these points, as they have been fully discussed, both in print and in the minds of individual photographers.

The prospects are certainly very bright for the largest convention yet, and for the benefit of the many who wish to attend, the following information regarding hotels and railroad rates is given:

Railroad Rates.

A railroad rate of one and one-third fare on the certificate plan has been secured, and by getting a certificate of the agent when you purchase your ticket to Indianapolis you will be furnished a ticket at one-third fare home.

Hotels.

No city is better supplied with good hotels than is Indianapolis, and the prices are reasonable, which are as follows:

Claypool Hotel, headquarters,	$3.00	and up	per day.
Hotel English, American,	2.50	"	"
The Grand, "	2.50	"	"
Spencer House, "	2.50	"	"
Circle Park Hotel,	1.50	"	"

Stubbins,	$1.00	and up	per day.
Occidental,	2.00	"	"
The Denison, European,	1.50	"	"
Loraine Hotel, "	.75	"	"
The Oneida Hotel, "	.50	"	"
Hotel Morton, "	.50	"	"

To reach the Convention Hall take Central Avenue, Brightwood, or East Tenth Street cars, which will take you out Massachusetts Avenue and land you at the German House, where you will be taken care of by the best Convention yet.

The hall is a beautiful one and just suited for making you feel at home. For those who wish, luncheon will be served in the building and save you the time necessary to go to the hotels. Every care will be taken to make affairs pleasant.

Remember, it is your duty to send an exhibit, and help by your efforts to raise the standard of photography still higher. You may not at once see the benefit, but if you will take note of the great improvements in photography in the last few years you will then realize the help you are lending.

Respectfully,
C. R. Reeves,
First Vice-president.

ACTION OF THE VIOLET AND ULTRA-VIOLET IN ORDINARY STUDIO PHOTOGRAPHY.*

BY FREDERICK E. IVES.

It is generally stated that modern gelatine-bromide plates are sensitive chiefly to the blue rays of the spectrum, between the Fraunhofer F and G lines. Vogel and others, whose tests were made with direct-vision-prism photo-spectroscopes have gone so far as to say that the action of the violet and ultra-violet is relatively so insignificant as to be almost a negligible quantity.

I long ago demonstrated the fallacy of this opinion by experiments with color screens which had been declared "safe" after such photo-spectroscopic tests, but which were nevertheless not practically efficient because not sufficiently opaque to ultra-violet; and also that screens prefectly opaque to ultra-violet would give orthochromatic effects by prolonged exposure on "ordinary" plates.

The desirability of an equally conclusive photo-spectroscopic demonstration of the important part played by the dark violet and ultra-violet rays was evident, but the means for providing it did not at that time appear to be available. Evidently a photo-spectroscopic test, in order to be conclusive by itself, must be made with a normal spectrum, and using average daylight, transmitted by an ordinary photographic lens or its equivalent. This involves the use of a grating, and those ruled upon metal are unsuitable, because, although giving normal dispersion, they show some selective absorption.

I believe I have now met the requirements for a conclusive spectrum test in a photo-spectroscope constructed with a cast celluloid grating and glass plate and lens, and used to photograph the spectrum of diffused daylight on a rainy day. One photograph, made on a Cadett spectrum plate, shows the strongest action in the violet, and action in the ultra-violet about equal to that in the blue. The sum of the violet and ultra-violet action appears to be about twice that of the blue.

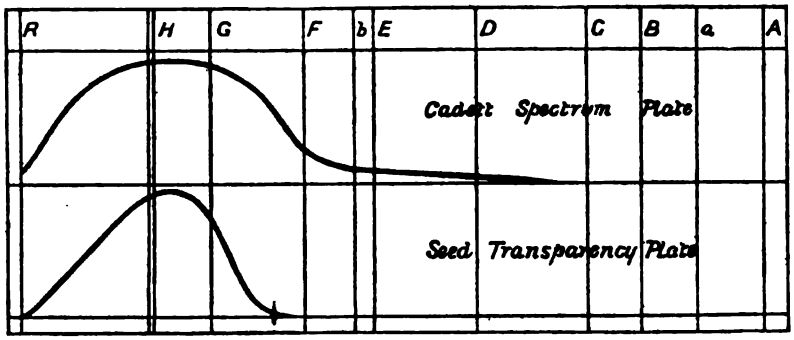
Another photograph, made on a very slow gelatine-bromide plate (Seed's transparency), is even more remarkable for relative violet and ultra-violet sensitiveness. Exposure sufficient to yield a dense image in the violet with normal development shows no developable action in the brightest blue of the spectrum, and altogether not more than a quarter of the work done is on the less refrangible side of the G line. I have reason to think that a plain collodion-bromide emulsion (wet) would show stronger action in the ultra-violet than in the violet, and (with moderate exposure) little more than a trace in the blue, close to the G line.

The results obtained were sufficiently surprising to make me wish to check them

* Read before the Royal Photographic Society, April, 1903.

by other means. If a screen could be found which would completely absorb the spectrum between E and G, but freely transmit the darker violet and ultra-violet, the necessary increase in time in ordinary studio camera work when such a screen was used would be found to be only two or three times, and thus prove conclusively what the spectrum test indicated. I thought that a very deep uranine (in gelatine) screen might meet the requirements, but found that four times as much exposure was required with it as without on a Cramer Crown plate. This led me to think that the uranine either absorbed a band in the ultra-violet or considerably damped the dark violet and ultra-violet. A photo-spectroscopic test proved the latter to be the case. With half of the slit covered by the uranine screen, there was no developable action between E and G on the corresponding half of the photograph, but the action in the dark violet and ultra-violet was also reduced by at least 50 per cent., thus explaining the necessity for increasing the time of the camera exposure to four times instead of two.

Direct sunlight would be more favorable to the blue, and blue-sky light to the ultra-violet. Rainy daylight may be taken as a fair average of the quality of daylight found in photographic studios.



The conclusion appears to be irresistible that in ordinary studio photography, under average conditions, more than half of the work is done by violet and ultra-violet light.

The two photo-spectrographs referred to accompany this paper in the form of a lantern slide, and also a spectrum diagram (reproduced) with graphic curves to approximately represent the distribution of density in the negatives.

DOUBLE TRAYS: THEIR USE AND HOW TO MAKE THEM.

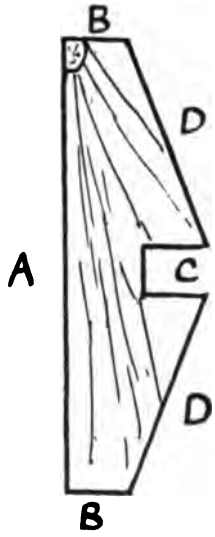
BY A. J. JARMAN.

OFTENTIMES when the use of a large tray is required for photographic purposes, resort is made to very inconvenient makeshifts, because of the comparatively high cost of large trays. Where trays are employed made entirely of wood, it is necessary to have them at all times partly filled with water because of the shrinkage which takes place when they are allowed to stand empty, if only for a period of twelve hours. If they are allowed to stand idle for a few days without wetting, the shrinkage is so great that the trays are worthless for immediate use. This defect occurs not only with the plain wooden trays, but also when they have been coated with a flexible water-proof varnish.

Again there are trays made of wood and lined with oilcloth, which answer very well for some purposes, such as containing the alum solution for gelatine, or the salt bath in albumen, or for washing prints after fixing in hypo. But in cases where solutions of nitrate of silver are used, or other

valuable and carefully prepared chemical solutions, the wooden trays or oilcloth-lined trays are not admissible.

In practice the tray almost universally adopted for solutions of nitrate of silver is the hard rubber or porcelain tray. Everyone who has handled a hard rubber tray is fully aware of the great care that must be exercised to prevent breaking a piece out of the end or side, the repairing of such a tray being a matter of considerable difficulty. Next to the hard rubber tray is the porcelain. A glance at this class of tray will tell whether it is thoroughly clean or not, but the cost is much greater than the hard rubber tray. It is a com-



plete loss if broken, as it cannot readily be repaired.

The use of the double tray here to be described does not appear to have come into general practice, although it possesses many advantages over any form of single tray. It is capable of outlasting in everyday use any other kind, whether for silvering, toning, fixing, developing or washing. Constant use of such trays for over seven years enables the writer to commend their durability and cheapness.

If the tray is to be used for the developing of large plates (25 x 30 or 20 x 24), the bottom of the tray is best made of a sheet of cathedral glass. This material has various indentations, which prevent the sucking action which would occur if plain glass were used. This enables the plate to be lifted for examination during the process of development. In every other case plain sheet glass may be used.

Let it be assumed that a tray is desired, the inside measurement of which is to be 24 x 32, the depth upon each side is to be two inches. A piece of sheet glass will then be required 24⅝ x 32⅝, and 5-16 of an inch thick. The wooden frame must be constructed so that a section view of the frame will present the appearance of Fig. 1. *A* must be four and a-half inches in depth; *BB* half an inch wide, cut and planed out of a piece of white pine, free from knots, one and a quarter inches thick. The groove at *C* must be three-eighths of an inch deep, and the same in width. This is to allow of a certain quantity of cement to surround the glass at the edges to cause a complete embedding at this point. When the ends and sides are cut to mitre, their outside measurement will be 26½ x 34½.

The tray is formed in the following manner: A cement is made by mixing some perfectly dried whiting (sieved) with shellac varnish until the mixture is of the consistency of soft putty. The grooves in the wooden strips are brushed with shellac varnish and the cement pressed in with the tip of a knife. All being ready the mitred ends are brushed well with thick shellac varnish or hot carpenter's glue.

The glass plate is now pressed into the grooves of two opposite strips; then the ends are pressed in likewise until the woodwork meets at the mitres. Four small pieces of wood are now placed at the corners of the woodwork, and a piece of sash cord tied loosely around. A piece of wood about three-quarters of an inch square and a foot long is then inserted on the inside of the cord and twisted round, so that the whole of the frame is drawn together tightly, allowing the shellac or glue to ooze out. Any little adjustment of the sides or ends may be made by a blow of the clenched fist, and by pressure, placing one end of the tray against the wall at the end or side of the work-bench. Do not use a hammer or mallet. All being in shape, wipe off the glue or varnish at the ends. Then with the tip of a carpenter's

chisel run along the glass and cut away the superfluous cement.

See that the joint around the glass is well filled, and fix the tray firmly together by screws put in diagonally across the mitre at top and bottom, with the screw heads well embedded. Then insert screws, one at the end of each mitre, from the end into the side. These screws may be two and a-half inches long and not too stout. Having thus fixed the tray all round, fill in the holes made by the sunken screws over the head with some of the shellac cement. Smooth this cement off; then stand the tray aside in its bound-up condition for a day or two until all the cement and joints are well set.

The sash cord may now be taken off and the joints scraped clean with a chisel and sandpaper, the inside of the tray to be cleaned in the same way. The whole may now be carefully brushed over, inside and out, with two or three coatings of shellac varnish, taking care to rub the surface down with fine sandpaper between each coating.

When the tray is complete it will be found to have cost but a fraction of the cost of any other tray, as may be seen from the following figures: Plate glass, 24⅝ x 32⅝, and 5-16 of an inch thick, $4.50; carpenter's work for wood frame: $1.75; cement, time, varnish, and screws, $1.75; total, $8.00, for practically two trays 24 x 32.

It will be observed that the glass bottom never touches the work-bench or the slats over the sink of the developing-room, this wear and tear being at all times borne by the edges of the tray.

PHOTOGRAVURE FOR PORTRAITURE.

During the past few years the taste of the more refined class of the public has undergone a great change, as regards portraiture. The highly glazed, purple-brown, toned silver prints are no longer admired by them. Now matt-surface pictures in reds, sepias, and blacks are what they desire, and the more closely these are made to resemble engravings the better are they appreciated. The higher class portraitists are, and have been for some time past, catering for clientèle who appreciate this class of work, and they find it highly remunerative. But still, even with the best results, the pictures are not like engravings, and it would be difficult indeed to produce, by any photographic process at present in vogue, a portrait that would for a moment compare with a fine mezzotype engraving.

The thing that occurs to us is whether it would not be worth the while of some of our leading portraitists, who can command a high price for their productions, to go in for veritable engravings for such of their clientèle as would pay an enhanced price for their pictures. Many, we have little doubt, would do so on account not only of the beauty of an engraving, but for the novelty of the thing. Some photographers may, perhaps, look upon the suggestion as an impracticable one, at least, so far as they are concerned, for it must be admitted that to produce a photogravure plate requires more skill than some who style themselves "photographers" possess. Photogravure has been successfully practised by some amateurs, and surely many professionals could quickly learn to work it. When only small sizes, such as would be required for general portraiture, the process is by no means difficult to learn, neither does it require any costly appliances for its working. In fact, with the exception of the "dust box," every portraitist possesses all that is necessary for working photogravure.

In case some of our readers may not be conversant with what photogravure really is, we give a brief outline of the process as it is at present practised, and by which those fine reproductions of paintings, with which we are all so familiar, are produced. In the first place an ordinary negative is necessary. From this a transparency, reversed as regards right and left, is made: this is best done by the carbon process, because a carbon print developed on glass at once gives what is required. This is then retouched and the shadows, should they be weak, and they may be if the transparency is made from a feeble negative, strength-

ened with pencil or color. A vigorous transparency is essential for photogravure. A suitable transparency having been secured, it then only remains to make the engraved copper plate from it. To this a "dust box" is necessary. This is a deep box, somewhat larger than the largest-size plate to be used, fitted with a shallow draw at the bottom. The box is mounted on trunnions, so that it can be revolved. In this is put some finely powdered bitumen, and the box revolved and agitated so as to fill it with the bitumen dust. It is then allowed to rest for a minute or two for the coarser particles to subside. The draw is then pulled out, the polished copper plate laid on, and then returned. The finer particles of the dust then settle on the plate. After resting for a short time, according to the fineness, or otherwise, of grain desired, the plate is withdrawn. It is next slowly heated over a gas stove, when the particles of bitumen melt and, to an extent, agglomerate and become firmly attached to the metal.

If the plate be now examined it will be found to be covered with a fine grain, which acts as a resist to the etching fluid—a solution of perchloride of iron. If the plate were now put into this solution all the minute interstices between the particles of bitumen would be bitten in and we should have a plate, when the bitumen was removed, with a fine even grain, in intaglio which, if printed from after the manner of copper-plate printing, would yield a uniform black print. In this respect it resembles a "rocket" mezzotint plate before the engraver commences his work upon it. But if, instead of putting the plate into the etching fluid, a carbon print from the transparency be developed upon it, that will act as a further resist, and the perchloride will, at first, only act upon the unprotected portions and, later on, on the less unprotected ones in proportion to the thickness of the gelatinous image. In the end we get an intaglio printing plate with all the delicate tones of the original negative.

In practice, after the carbon picture for which a special tissue is supplied has been developed on the bitumenized copper plate, and dried, it is put into strong alcohol to remove the last traces of water. The margin of the plate, as well as the back, are then coated with Brunswick black to protect them from the action of the etching solution. Next the plate is put into a somewhat strong solution of the perchloride of iron, which will only attack the deepest shadows. When these have been bitten in to a sufficient depth, the plate is transferred to a somewhat weaker solution, which attacks the darker half-tones. It is then put into still weaker solutions, which etch the lighter and more delicate half-tints. As a rule, four different strengths of solution are employed in the etching. When the plate is fully etched it is washed with water, the gelatine image removed, and the bitumen cleaned off with benzol. After polishing the plate is ready for printing from.

It may be handed over to a copper-plate printer or the photographer, after a little practice, may print from it himself, as, for small sizes, an ordinary rolling press, with three or four thicknesses of printer's blanketing between the roller and the plate, will suffice for the purpose. Usually the copper plate is treated before the ink is applied, but now inks are supplied that can be used with a cold plate, and these are the most convenient to employ. The plate is inked up, evenly all over. The ink is then carefully wiped off the surface, leaving it only in the intaglio portions. A piece of plate paper is laid on, and the whole passed through the press. The elasticity of the blanketing forces the paper into close contact with the ink, which is taken up by it. If the negative and the transparency were suitably retouched in the first instance, and the plate properly etched, but little, if any, hand work will be required upon it. Should it, however, do so, a roulette may be employed for strengthening the shadows, and a scraper for lightening the half-tones, while a burnisher can be used for brightening up the highest lights. All this work, after a little practice, can be done by any skilful retoucher.

When once the copper plate is obtained, prints in any color, and almost on any paper, that require no mounting, can be obtained at a less cost than ordinary silver ones. Of course, in the above we have only given a brief outline of the process of photogravure, and those who require full

working details of it should obtain a work on the subject, such as that, say, of Mr. Dennison. This article is only intended to be suggestive to high-class photographers, to whom it may be of some service.—*British Journal of Photography.*

REMOVING GELATINE FILMS FROM CRACKED NEGATIVES AND THEIR TRANSFER TO A NEW SUPPORT.

BY A. J. JARMAN.

It sometimes happens that a negative of value becomes cracked in such a manner that the glass only is broken, not the film. There are several ways by which the difficulty of printing from such a negative may be overcome so as not to show the crack. One method in particular is the insertion of a piece of albumenized paper or good tissue paper between the face of the negative and a piece of clean glass plate the size of the negative, then binding the two together with strips of gummed paper. The best results are obtained by this plan when albumenized paper is used.

Sometimes more than one crack is produced in a negative, in which case the difficulty of utilizing such a defective plate is greatly increased.

Many times the question of how to best remove the film and retransfer it to another glass plate has arisen. One difficulty—if not the most important—has presented itself, namely, how to penetrate the substratum which holds the gelatine film composing the negative, so as to release it from the glass support, because the substratum is generally a compound of gelatine and chrome alum, which is harder and more adherent to the glass than the gelatine film. This is often noticed when cleaning old negatives with hot water and carbonate of soda. Although the film dissolves from the plate perfectly, the substratum still remains in patches in such an adherent form as to require the use of a knife to effect its complete removal.

There is a method of accomplishing this without the use of either hot water, soda, potash, or of strong mineral acids, none of which is certain in its action.

The process here to be described is one of great simplicity—one that can be used with certainty by any person, the solution employed being quite cold, and the application of heat being quite unnecessary. In fact, the colder the solution the better the result.

If the negative is a portrait and the face has been retouched, it will be advisable to remove the retouching with a tuft of cotton moistened with turpentine and cleaned off thoroughly. This, however, is not absolutely necessary, for a film can be removed just as well with the retouching on as if it had been removed. Whichever plan is adopted, a small amount of retouching will be required after retransfer. One point in particular must be attended to: the trays used must be thoroughly clean, and only hard rubber or composition trays can be employed, for reasons which will be explained. The bottles that are to contain the stripping solutions must also be quite clean. In fact, use new ones so as to be quite sure of this. The results will repay those who undertake this extra trouble.

The composition of the chemicals given below is the same as that known as "Magus." It is not only simple, but sure and certain in its action. Prepare the two following solutions in two separate bottles:

No. 1.

Fluoride of Sodium . .	½ ounce
Water (ordinary) . . .	16 ounces

Cork this bottle, shake well, and mark "No. 1."

No. 2.

Citric Acid in powder . .	1 ounce
Water	16 ounces

Shake this well, cork it, and mark "No. 2."

Have at hand a clean glass plate, say 6½ x 8½, in a tray of clean, cold water. If the negative to be stripped is 5 x 7 it should be transferred to a 6½ x 8½ plate, so that if the film is not placed quite truly, it will be a very easy matter to cut the plate to the right size after the film has dried. To strip the film from the cracked negative, take four fluidounces of No. 1 and

pour into a tray of hard rubber, 6½ x 8½; then add four ounces of No. 2. Rock the tray so as to obtain complete admixture of the two solutions. Then immerse the negative, film side uppermost; carefully rock the tray, first endwise, then crosswise. Allow it to stand for half a minute, then rock again. It will now be seen that the film is frilling slightly at the edges. Rock the pan a little. Now, with the forefingers and thumbs of each hand, lift the film clean off the cracked plate, place it in the water above the clean glass plate, lift the plate by the two top corners, and adjust the film so as to leave a clean margin all round. Lift the plate and film together by the top, and drain slightly. Lay the plate in a horizontal position and carefully adjust the film so that there are no air-bubbles present. See that the film perfectly adheres to the glass support. Then, after draining off the excess of water, allow the transferred film to remain in a horizontal position until dry. Never allow the drying to take place with the plate in a vertical position, for the film may become split. There is just enough tackiness upon this side of the film to admit of its adhering firmly to the glass plate. By this method of transfer a valuable negative may be saved for future usefulness.

A very useful adjunct for this class of work is a very thin *soft* squeegee. With the aid of this handy tool the transferred film may be set down very evenly upon its new support and the excess of water removed at the same time.

It may be advisable to make a trial or two upon some discarded negative before attempting the transfer desired. This will give the practice and confidence necessary for the final operation.

The process will appear marvellous to those who have never performed such an operation. The true action is this: When any acid is brought into contact with fluoride of sodium (citric acid in particular), the element fluoride separates from the sodium base and attacks the glass surface through the porosity of the film. By this means the adherence of the gelatine film, together with its substratum, is released, the film being then easily lifted. At the same time the citric acid combines with the sodium to form citric of sodium, which remains in the water. Several negatives may be stripped in the same solution, but the solution will not keep. After use it should be thrown away.

If it is desired to enlarge the film after stripping, simply allow it to remain in the clean water for a minute or a short time longer, then proceed as before to attach to the glass plate. Caricatures are easily produced by this means—by stretching the film unevenly. The face or any part of the figure in a portrait can be easily distorted, and it remains permanently so upon its support.

The reason for using hard rubber or composition trays instead of glass or porcelain is to avoid their being attacked by the liberated fluorine, which would also lessen the action upon the negative.

PICTURES WHICH TELL A STORY.

MANY photographers have, at one time or another, made a mild ephemeral reputation by the production of some clever or catchy genre picture. Several firms make a specialty of turning out such pictures, and a number of photographers in large cities earn a more or less precarious livelihood by their production. The large firms sell their pictures through recognized publishers, who cover the country; the smaller men are content with a local sale, and either peddle their pictures direct to the stores or have an agent who does so. The pictures which sell widely are usually pictures with some cheap sentiment—pretty women and children, in pretty dresses, playing games or listening to music. Brightly tinted with aniline colors and framed, they form attractive wall pictures, and, I believe, are in much favor as wedding presents.

There is no doubt about it—people like pretty pictures, and are ready to buy them. And in spite of the myriad pictures so easily obtainable—pictures ranging from copies of "old masters" down to the color pages of a Sunday newspaper—there is always a demand for more. Is it wise

for a photographer to attempt their production? That depends upon circumstances. If it is that the photographer has a feeling for such work he will probably do so. And the man who has the necessary artistic suggestion will have no difficulty in finding his subjects. Pictures by Kupper, or by Lingley, for example—with which readers of WILSON'S are familiar—contain evidence of the personality of the photographer. Pictures from their cameras would be recognized by every reader, even if the line of acknowledgment were omitted. In the case of a man who has no special inclination toward genre work the advantage of it is less obvious. But even here it may have its uses. On the theory—a wholesome theory—that the small man should be an all-round man—genre work is good. In some hands it may develop into one of the paying specialties—those specialties of which at least one should be on hand all the time. A succession of specialties keeps the public alive and keeps the photographer alive. And a good bit of genre work has its value as an advertising attraction. Take what is perhaps the simplest of all genre pictures. The photographer who first improved on the undressed baby by bringing out the bath-tub and seating baby in it—on a scrap of warm rug—with a lump of soap as a side accessory, made money out of his idea. It didn't cost him a cent, and was just as simple as propping the child on a skin rug, and a certain proportion of mammas thought the idea cute. The bath-tub baby is not the only "studio" genre picture. Afternoon tea for a lady, an interesting book or newspaper for a man; or the child, not watching, but playing with the pretty bird; or the box of bricks, are equally simple. There are enough of ideas all ready to be thought out.

TODD'S TALK AT THE PENNSYLVANIA CONVENTION.

BY ONE WHO HEARD IT.

ONE of the most helpful features of the recent convention held by the photographers of Pennsylvania, Maryland, West Virginia and Delaware was an illustrated talk, on the evening of Wednesday, June 3d, by Mr. F. Dundas Todd, editor of the *Photo-Beacon*. Mr. Todd, if anything, is practical, and in his treatment of the general subject of pictorial composition in photography he provided for his hearers a fund of suggestion that could not but have been very helpful. Starting in with the general subject of spacing, Mr. Todd showed by means of the lantern a number of sketches illustrating pictorial advantages of variety. Beginning with a given space, which he first divided by a line into two equal parts horizontally, and again into two more equal parts vertically, he dwelt upon the monotony resulting from such spacing and contrasted it with other sketches in which the spaces had been irregularly divided, first by horizontal, next by perpendicular, and next by curved lines. Carrying his illustration still further, he showed upon the screen a number of examples of landscape and architectural work and pointed out how, in every successful picture, a large share of its success depended upon the variety shown in the spacing of color masses and forms.

Mr. Todd showed the value of connecting different parts of a landscape composition by tree forms, lines of fences, stone walls, and the like and called especial attention to the pictorial effect produced by the proper placing of foreground objects so that they should carry the eye in the desired direction, or fill the otherwise blank space, thus giving balance to the composition.

Applying the same principles to portraiture, he showed a large number of slides from some of the best-known studios in the country, and called especial attention to the lines of the figure, to the positions of the arms and hands in helping to carry the eye in the desired direction. A very important point that he made was the placing of the figure in the space allotted to it so that the blank spaces around it should show variety; that it should not be equally divided either at the right or left of the head or above it, also that variety must govern the introduction of high lights in the picture and all masses of dark color as well.

He showed how in one very successful portrait containing two figures, that there were no two spaces in the picture of equal size or shape, that the light parts of the one figure were opposed to dark or shaded masses in the other, and that the eye was carried by the lines of the figure in a graceful curve from the top to the bottom of the composition.

Mr. Todd also touched upon the prevalence of the black background, the use of which he admitted in some cases, but entered a most vigorous protest against its too general application. Several slides were shown of children and young girls posed against this sombre accessory which, in Mr. Todd's opinion, were wholly without reason and in bad form. Dainty child effects, he claimed, were impossible under such funereal treatment, and, in closing, urged his hearers to study carefully all these points before exposure for a negative.

Another very important point which he brought out most strongly was what he called the tying of the figure to the edges of the picture margin, showing how necessary to good composition was variety in this particular. Throwing upon the screen a portrait of a man, he demonstrated the necessity of so trimming the print as to have the trimming line intersect the coat or portion of the figure which leaves the picture space at a higher point on one side than on the other. He also showed the importance of studying the relative height of each and the necessity of careful trimming in the production of a pleasing composition.

It is impossible in this brief article to more than call attention to some of the points which he made apparent, but a careful analysis of any work that may be selected will show the importance attaching to the suggestions above noticed.

THE HOME PREPARATION OF GOLD CHLORIDE.

BY H. C. STANDAGE.

THERE are many materials used by the photographer which he could easily make for his own use. Such an article as chloride of gold is one which would be worth while to prepare one's self instead of purchasing it from a local dealer in photographic chemicals. A 15-grain tube of gold chloride costs 45 to 50 cents, but, practically, there is only about half the above weight of metallic gold present, the remainder being chlorine. Now, it is this gold that the photographer wants in his toning bath, not the chlorine; therefore, to make his toning salt would save a heavy item of outlay, because a large quantity of chloride of gold could be prepared from a book of gold-leaf such as is used by the gilder of picture frames, which costs about 35 to 40 cents per book. There are about twenty-five leaves in a book, and I have found that one leaf will prepare sufficient gold chloride to tone ten to twelve prints, half-plate size. A few figures will prove the truth of the above statement concerning gold chloride.

The atomic weight of gold is 196.6 and the atomic weight of chlorine is 35.5, but as the latter element combines with the gold in the proportion of three equivalents of chlorine to one equivalent of gold we find that one-third of the weight of auric chloride consists of chlorine, but the other two-thirds is not all gold, because there is a certain proportion of water of crystallization more or less present, *e. g.*:

Au	+	3 cl.	=	Aucl.	+	aq.
196.6		$3.55 \times 3 = 106.5$		203.1		water.
gold.		chlorine.		auric-chloride.		

Gold in its metallic form cannot be utilized in the toning bath, the trichloride of gold ($AuCl_3$) being the only salt of gold available for the purpose. Now, there is no difficulty about dissolving metallic gold so as to convert it into the trichloride, but there are certain precautions necessary so as to guard against the presence of undesirable bodies, such as copper, which is always present in the standard gold coin of the realm (standard gold is an alloy of 11 parts pure gold and 1 part copper, the specific gravity of the alloy being 17.157); therefore, gold coin is not suitable for producing the chloride, whereas leaf-gold is pure, or should be.

An alloy leaf-gold called "Dutch metal" has no gold whatever in its composition, it being an alloy of copper, zinc, and tin; but it is best to test the gold for the presence of copper (*vide infra*) before converting it all into gold chloride. The following simple directions will enable any photographer to prepare his own chloride as pure as he can buy it:

The apparatus necessary for the production of gold chloride simply consists of a spirit-lamp and stand for supporting a porcelain evaporating dish above the flame, and a glass stirring-rod. The solvent for gold is prepared by mixing 1 part of hydrochloric acid (HCL) with 2 parts of nitric acid (HNO_3), both by fluid measure. These proportions may be varied to the extent of 1 part HCL to 5 parts HNO_3.

There are two forms of gold chloride, viz.: Aurous chloride (Aucl) and auric chloride ($Aucl_3$); hence the latter is called the trichloride of gold. The aurous chloride is an unsuitable substance and useless for photographic purposes. It is the trichloride ($Aucl_2 + aq$) that is used for preparing the toning bath.

The operation of preparing the trichloride consists in putting the metallic gold-leaf into the evaporating dish and pouring on it sufficient of the mixed acids (called aqua regia) to dissolve the gold. At first the metal turns black, and then entirely disappears in the fluid, forming a full, rich, yellow-colored liquid. As the liquid contains free acid it is best to gently warm the contents of the dish and evaporate the fluid until the mass begins to turn an orange-red color. Brownish yellow fumes of chlorine and nitrogen oxides are given off. At this stage remove the dish from the spirit flame and allow its contents to cool, and then dilute with cold water for use. This is very simple, but there are several precautions to observe.

In the first place do not continue the evaporation after the mass shows signs of becoming red and forms a pasty mass.

Secondly, it is as well to operate on a little of the gold at first and test it for the presence of copper, which would interfere with the toning qualities. The presence of copper is best detected by neutralizing the acid liquid with slight additions of carbonate of soda until all effervescence ceases. Any copper present in the gold will be precipitated as a green carbonite, which will occupy several hours in separating out.

Filter off the solution from the green P. P. and concentrate the filtrate until it reaches the red, pasty state above referred to; then allow it to cool and dry in dry air, or else put the pasty mass into small test tubes; hermetically seal them by fusing the open end in the blow-pipe flame. The acid solution of gold chloride, after neutralizing with the soda carbonate and filtering, will contain chloride of soda in solution, the presence of which will render the liquid a bright yellow. To eliminate the soda chloride the liquid must be carefully evaporated, so as to drive off the chlorine along with the water lost by evaporation. When the mass turns from the yellow to the orange-red color you will know that the gold chloride is in a neutral state. If the gold is known to be pure there will be no necessity for neutralizing the acidity of the mass.

In the writer's experience he finds that the pasty mass of chloride, when used, gives a rich, purple-brown to prints, but too much nitric acid should not be present, as that precipitates sulphur from the toning bath, and this tends to sulphuration of the print. I find that by dissolving the metallic gold in a mixture of 1 part nitric and 2 parts HCL acid and gently evaporating it until the yellow fluid begins to become pasty and of a deep red, allowing it to cool and dissolving the pasty mass in a little water, that a good liquid chloride of gold is at once ready for use in the toning bath.

The acid chloride (HCL $Aucl_3$) is a very hygroscopic substance that readily deliquesces by imbibing moisture from the air, and, therefore, unless made use of at once, should be kept in hermetically-sealed tubes, so that a correct quantity of the gold can be used as required. If only small quantities, such as a grain or two of gold, are operated on, the solution of the metal can be effected in a test tube, but for large quantities, necessitating the evaporation of the acid liquid, a porcelain evaporating dish is the best utensil to use.

The auric chloride produced by the above means is soluble in ether and alcohol, and readily combines with other chlorides to form double salts called chloro-

aurates. The value of gold chloride as a toning agent is due to being so readily precipitated in the metallic state by many other substances. For example, 2 parts of auric chloride added to 3 parts of sulphuric acid and 3 parts of water, the result is the deposition of 2 parts of metallic gold and the production of 3 parts sulphuric acid and 6 parts hydrochloric acid.

So, likewise, when 2 equivalents of gold trichlorides are mixed with 6 equivalents of ferrous chloride, the gold is deposited in the metallic state and with the product of 3 equivalents of ferric chloride. The same action takes place when a mixture of gold chloride and ferrous sulphate is made; metallic gold is deposited, ferric chloride produced, together with a body having the composition $S_8O_6Feo_2^{VI}$.

Copper chloride, mercury nitrate, and nitrate of potassium all reduce gold chloride to the metallic state with the production of various salts.

The toning of a print depends on this property of the metallic gold being deposited from the trichloride. The silver in the print combines with the chlorine in the gold chloride, while the metallic gold is deposited in place of the silver. The fixing bath converts the chloride of silver into a soluble condition, and thereby enables it to be removed in the subsequent washing which the prints receive. As the strength of a toning bath varies from 1 to 2 grains of gold per quart of the liquid, a book of gold-leaf will make a large amount of gold chloride at a trifling cost.

One final word: Another source of economy is to save all the exhausted toning-bath fluid, droppings from toned prints, etc.

The presence of copper in the metallic gold that is dissolved in the aqua regia will be detected by the metallic solution becoming *blue* or *green*, or, if the metal dissolve, the addition of a little liquid ammonia to the solution will cause the mixture to assume the well-known blue tint so characteristic of copper in the presence of ammonia. All copper should be eliminated from the gold before treating with chloride solution, or all the prints will be spoiled and no toning result.—*Practical Photographer.*

THE VALUE OF A BUSINESS.

BY PAUL CLARE.

THERE is an American photographer (that is sufficiently vague, but I could name the actual man) who wants to sell his business. He is a good fellow, and would be the last man in the world to beat or deceive anyone. His business is well established in a bright little railway town, with good customers among people who draw a regular wage and buy "luxuries" when they have money in hand. He does a good business in buttons and midgets, but his leading line is a cabinet at $3 a dozen. His turnover is just $2000 a year, and he wants $10,000 for his business. He honestly believes that he is asking a fair price. He has carefully figured it out and he will sit down with you and explain it all. He will show that he is not making any fancy charge for good-will, and that in return for the money he will hand over a considerable amount of solid matter; it is even possible that he will make you think as he thinks.

For myself I have considerable skepticism. I look at it from what I consider the common-sense point of view. Five per cent. on $10,000 is $500. Allowing first for payment of this interest, the remaining gross turnover is $1500 a year. It will be quite moderate to calculate that the *net* profit, after everything except personal living expenses is paid, will be not more than half this sum. So it figures out that a man will invest $10,000 for the privilege of earning some $14 a week; his investment to return him 5 per cent. Possibly the business can be worked up to something better. But if so the man who does the working up is the man to get the benefit—he is not going to pay the other fellow for it. Looked at fairly and squarely, the offer does not seem good enough.

Such a business offer suggests that some men have but the vaguest notion of where they really stand financially. The way to

get the knowledge is to sit down and figure it out on a rational basis; and many men have never done this. How many photographers took stock on last December 31, or any time last year? Among my personal acquaintance I know a number of photographers who did not do so.

An honest stocktaking is a profitable investment of time. Annual balance-sheets for a number of years are a useful asset if a business is at any time to be sold. They are valuable in the unfortunate event of a fire; always supposing—first, that the insurance has not run out a few days before, and second, that the papers are in the safe or elsewhere out of reach of the blaze. Their greatest and most immediate use is to show whether the business is progressing or not, and where are the possibilities of amendment or retrenchment.

The actual work of stocktaking will not, in most galleries, be heavy. If a man will take off his coat and hustle he can generally do all the heavy work in one day, or in a couple of long evenings. That is, he can make a list of everything in stock. Figuring it out and getting at the true value of the stuff may be done afterward.

For a man who has never before taken stock the first attempt will probably prove wholesome rather than pleasant. The result may be all right, but the process of "getting there" will bring to light many little dark corners. The operation is simple. Each room is gone through in turn, and everything in it is noted down. In the reception-room there is a desk, a couple of fancy tables, three chairs, a stove, a carpet, a couple of rugs, so many picture frames, etc. In the dark-room there are all the fittings, from the sink to the rose tap; and all the implements down to the smallest graduate. The store-room has so many dozen plates, so many hundred mounts, so many pounds of chemicals. So every room is gone through, and everything is listed, from the much cherished lens to the anæmic palm accessory.

Such a list, conscientiously made, is very useful to the photographer—it is often equal to hard cash in his pocket. Photographers, like journalists and other people, have their failings, and one failing that is common among the fraternity is unsystematic buying. When everything that is dead stock, or everything that has not been used for twelve months is put down in black and white it makes a gruesome showing. There are a number of dollars which might have been saved if only the drummer had not been so very pleasant—and so very persuasive. It is a traveller's business to sell things, and the photographer if he is doing a live business should be open to buy; but he should be enough of a business man not to yield to the persuasion to overstock with usable material, or to buy useless accessories. An honest inventory of everything in the gallery will bring to light evidence of many of these little lapses. I know galleries where there are shelves lumbered with printing paper bought a dozen years ago—paper made by firms long since dead; paper that is useless even as residue at the present price of silver.

To find the true value of the stock is not so easy as to merely list it. For the latter nothing is required beyond a few hours' conscientious work. But to find out how one stands financially, there is no other class of figuring quite so amenable to complacent self-deception as is stocktaking. There is that packet of Ilo paper—fifty dollars' worth. At least it cost fifty dollars, and it has never been used, so down it goes among the assets—fifty dollars. It should not figure as one cent; and it should forthwith be made over to the refiner or the dustman. There is the studio camera-stand. It has been in use five years and it cost forty dollars. This is a rather different proposition. You say the stand is as good as new, and with some reason; for it is strongly made, and will probably last as long as you will. So, except for purposes of sale, it may be considered as worth somewhere near what it fetched. But you have been talking of purchasing one of a newer pattern. Have you got it yet? For, if so, or when you do, the old one will be worth nothing except what it will fetch (and it should be cleared away, for you will never use it). Are you going to keep it in a corner of the studio and enter among the assets, next December, "two camera stands, $90?"

There are many things in the studio

which, at least to you, are worth much more than they cost. There is the old lens, which cost, without the glamour of a maker's name, thirty-five dollars; it is as useful to you, in its way, as the modern lens which cost ten times the amount. It would scarcely do to price it on this basis, for it will fetch no such price if sold; but it is fully worth what you gave for it, and perhaps more. On the other hand, there are old accessories, and old backgrounds, and old materials, which are worn out, or spoiled, or discarded. Some of them have long been an eyesore in the gallery.

If you have been going on without any inventory or valuation for years, it may well be that the loss (or rather the difference between present and cost values) will run into hundreds of dollars. Much of the money has been wisely spent, and the things bought have served their purpose; some of it, perchance, has been spent under sudden impulse or under persuasion. But stuff which has been wrongly bought, or which has outlived its usefulness has been cluttered around the gallery to a greater degree than has been quite realized.

To learn the value of a business is more than valuing stock. The book debts, due and owing, need to be carefully balanced. Among the former, alas! are some which are very overdue; some possibly which are beyond hope. The studio may be in a very good position, and leased at an easy rent; if so the lease is a very real asset. Often the personality of the photographer is the most vital asset of all. How often a business fritters away after a change of proprietorship; sometimes new blood invigorates an old and decaying business. But in the majority of cases the most real value of stocktaking is to be found in the clues it gives to injudicious buying and the accumulation of useless material.

WATER VARNISH.

Probably few among the many thousands of photographers are aware of the valuable properties of what is termed "A Water Varnish." Seeing that this useful chemical is not sold like other varnishes generally are by photographic dealers, the chances are that many of our readers whose experience does not date back beyond the introduction of the modern dry plate may never have heard of such a varnish. On the other hand, those who can look back upon the days of wet collodion will require no reminder of the advantages this simple wash conferred on a collodion film by reason of its being a certain preventive of film splitting. In cases where only one or two proofs were required from a negative, its application did away with the necessity of the additional operation of varnishing by means of a spirits of varnish. It also provided a most excellent tooth to the surface of the film, to enable any amount of retouching being performed. It is not only in connection with its application to a wet collodion film that water varnish forms a valuable addition to the stock of chemicals in all-round photography; it is almost invaluable in the case of gelatine as with wet collodion films. In the case of gelatine negatives the water-varnish is applied in the shape of a wash directly after the negatives have been washed to free their films from all traces of hypo, or, in other words, at that stage when the usual drying operation would begin. After the varnish had been applied the films are dried in the usual manner, and its application will soon convince anyone that has experienced the difficulty of retouching by reason of the want of a tooth in the film to make a lead-pencil bite, as the saying goes, that were this the only benefit accruing from its application it is well worthy of being employed.

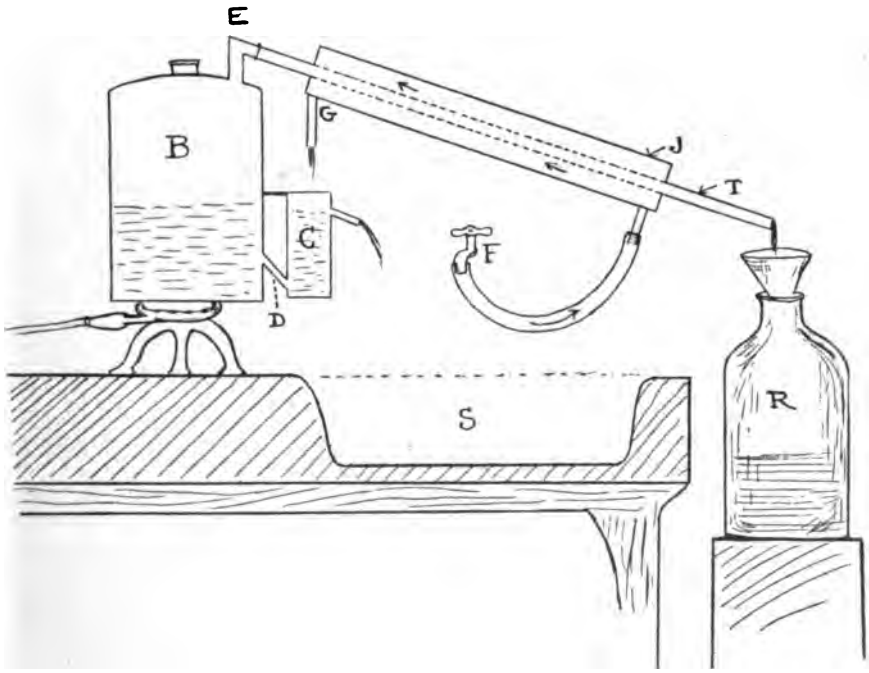
The use of water varnish, however, does away with the necessity of employing collodion as an additional protection to a negative, and is, perhaps, the best known remedy against damage from silver staining that experienced workers are acquainted with. As a varnish it is not costly, neither is it difficult to make in reasonably small quantities, while its application is simplicity itself. To those desirous of benefiting by its use we recommend the following formula as one that will yield an excellent sample of water varnish: Place in a clean, enamelled pan one pint of

water, into which insert four ounces of shellac in thin flakes, and place the vessel on a fire or gas-stove until the water is raised to 212 degrees Fahrenheit. When this temperature is reached a few drops of hot, saturated solution of borax is dropped into the boiling pan containing the shellac and water, taking care to stir vigorously with a long strip of glass until the shellac is all dissolved. Too much borax should not be added, only just sufficient to cause the shellac to dissolve, and it is better to stop short, if anything, before all the flakes dissolve out than to add too much borax. The solution is then filtered carefully, and, when cold, the water varnish is ready for use.—*British Journal of Photography.*

AN AUTOMATIC STILL FOR A DOLLAR.

BY H. F. SWARTZ.

A RICH, nutritious water, resembling restaurant coffee in color and flavor, doubtless has its advantages from a hygienic point of view, but in photography it is an unmitigated nuisance. Mud and microbes are, however, not the only drawbacks to be considered in water. The writer was for a long time supplied with water of diamond clearness and irreproachable purity for table use, yet it was the unsuspected evil genius in his M. Q. developer. It seemed impossible to get good black tones on velox, even when entirely omitting the customary bromide. The use of distilled water brought instant relief. Various and sundry experiences led to the belief that water is the most important chemical used by the photographer, and that it, as well as the sulphite and all the rest, ought to be chemically pure.



The trouble is to get distilled water. In the smaller towns it is rarely to be found in the druggist's collection of curious things, and even in the cities the transportation of

the bulky containers is very inconvenient and expensive. The writer has solved the problem to a nicety. His apparatus cost one dollar, complete, and now distilled water is condensed as needed at an expense of four cents per gallon. What is of almost equal interest is the fact that the still, once put in operation, can run indefinitely without any attention whatever, everything being entirely automatic.

Purchase from a neighboring tinsmith for twenty-five cents a one-gallon galvanized oil-can; have him remove the spout; then have rolled a tube of sheet zinc three feet long and one-half inch in diameter; also, have constructed an elbow of the same stuff, the angle being a little less than 90 degrees. This elbow—E in the diagram—takes the place of the spout, and into the free end of it is slipped, snugly, the end of the three-foot tube (T). Next make a zinc tube twenty-four inches long and one and one-half or two inches in diameter. Solder into each end of this latter tube smaller tubes, three inches long and one-half inch in diameter. The twenty-four-inch tube (J) is the water-jacket. It is fastened over the middle of the long tube (T) and held in place, as well as made water-tight, by soldering a perforated cap on each end. This completes the condenser. In use one end of the long tube is slipped firmly into the elbow and the other end rests upon the bottle to receive the distillate. Cold water is led by a rubber tube from the tap (F) to the bottom of the jacket, and flows out of the top (G).

The still is fed automatically by a simple device, as follows: A cup (C) is made of zinc, two inches in diameter and six inches deep. One inch from the top is an overflow pipe, to which a rubber tube can be attached, leading the water away to the sink. This cup is connected to the can (B) by a tube (D) one-half inch in diameter and three inches long. This connecting tube must be set on a slope, so that the end in the can is about an inch higher than the end in the cup, thus making a trap. The water flowing out of the top of the condenser (at G) falls into this cup and thence into the still until the level of the overflow is reached. At this level it remains constant, automatically replenishing the still from the cup as evaporation proceeds. For heat the writer uses a small gas-burner, purchased for twenty-five cents. A blue-flame oil-burner would do as well.

Start the cold water running through the jacket in a stream about the thickness of a pencil; light the gas under the still, make provision for the overflow from the cup, and go about your business. The apparatus will take care of itself.

If the reader is willing to make an outlay of an extra dollar, an improved boiler will be found an ultimate economy. Let the tinner make a copper boiler twelve inches in diameter and eight inches high, and through it run six or eight vertical tubes. Adjust the cup so as to keep this boiler half full of water. The economy in gas thus secured will amount to nearly 30 per cent. Either style of boiler may advantageously be wrapped in asbestos paper of several thicknesses.

Intensification Before Fixing. Dr. Reiss gives the following formula for intensification before fixing:

Water	10 ounces.
Mercury Bichloride . . .	230 grains.
Sodium Chloride . . .	230 "
Pot. Bromide	230 "

The under-exposed plate is developed until it commences to fog, is then removed from the developer, washed for five minutes, and then placed in the above until nearly all detail has disappeared, being no longer visible by transmitted light; the plate is then washed for at least half an hour in running water. Return plate to developer, rinse, and fix.

Foggy and flat negatives or lantern slides will become clear and rich in contrast again, according to Prof. H. Kessler, if the following process is applied: The dry negative is bleached completely with bichloride of mercury, washed for fifteen minutes, and then blackened with a solution of 50 grains sulphite of soda, 5 grains metol in 10 ounces of water, until the blackening has penetrated to the glass side. Then wash again, and reduce with a solution of fixing soda and red prussiate of potash, until the picture has become clear. Finally wash again. Blackening with sulphide or ammonia cannot be done, as the intensification will disappear in the reducer.

I. PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

II. PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

III. PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

IV PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

V. PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

VI. PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

VII. PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

VIII. PORTRAITS OF WOMEN

By S. H. Lifshey, Brooklyn, N. Y.

TEMPERATURE AND EXPOSURE.

THE influence of temperature on exposure is a detail of photographic practice which has not yet received the attention it deserves. Summing up a number of experiments in this important field, Abney reported (1895) as follows: Plates vary in their sensitiveness directly according to the temperature—that is to say, the sensitiveness of a plate increases with a rise in the temperature and decreases as the thermometer falls. The variation is greater in the case of slow plates than with rapid ones, and Abney's researches proved that a very rapid gelatine plate required at a temperature of 0° F. about one and one-half times, while a slow gelatine lantern plate required about two and a quarter times the exposure necessary at 100° F.

In ordinary everyday work we are not likely to often meet with variations of 100° in the temperature, for the difference between a hot summer's day and an ordinary cold winter's day, as a rule, is not much over 55° or 60° F.; still this is enough to add about half as much again to the necessary exposure for a slow plate, and in very cold weather the variation will be greater. Although we have always known that longer exposures were necessary in winter than in summer, yet we only considered this to be due to the variation in the actinicity of the light, and disregarded the question of temperature. We now learn that this factor must be considered as well.

If we consider the light in July to be four times as actinically powerful as in December, it naturally follows that in the latter month we should give any particular subject at least four times the exposure that we should give in July. We may have a warm winter's day of about the same temperature as a cool summer's day, and in that case the proportion of 4 : 1 would be correct; but consider what happens in the following case: On a very hot summer's day, with the temperature at 85° F., a certain subject requires, in sunshine, on a very slow plate—not, of course, a lantern plate—say, one second exposure; in the depth of winter, in sunshine, but with the thermometer at 10° F.—not an unusual temperature in the last winter—on the same subject we should have to allow four times the exposure for the difference in the light, and in addition about three-quarters as much again for the difference of 75° F. of temperature. This would make an exposure of seven seconds instead of four. Again, suppose the winter view is not taken in sunshine, but in what the tables call "dull light;" this makes it necessary—according to Wheeler's tables—to treble the exposure, or give twelve seconds on account of the light only, or twenty-one seconds altogether in consideration of the difference in both light and temperature. The extra amount of exposure to be allowed on account of temperature is now becoming serious, and the longer the initial exposure has to be on the account of the light only, so much the more serious becomes the question of whether the exposure is to be increased on the ground of low temperature or not. Those who rely solely upon exposure tables, we believe, generally come to grief over exposures made in the depth of winter. We imagine these tables are calculated simply upon measurements of the actual actinic value of the light at different seasons of the year. If so, it stands to reason that great differences in the temperature will render the information given by them comparatively valueless for long exposures on slow plates, unless we know what proportionate variation to allow. It is certainly a relief to hear that the sensitiveness of fast plates is not so much affected by heat and cold, but at the same time this renders the question of what allowance to make still more complicated, for the factor must vary not only with the temperature, but with the speed of the plate.

The most practical way in which to make use of the information which Captain Abney has added to the great store for which we are already indebted to him is, perhaps, to give about double the tabulated exposures in intensely cold weather, when we use slow plates, or reduce the time slightly in very hot weather. Quarter-plate camera workers may, however, store up another useful hint for the next cold winter, and that is that plates in dark slides carried in an inner pocket of the coat are likely to give more fully-exposed

negatives than if they are carried in a magazine or leather case, where, perhaps, their temperature may be reduced to below freezing point.

The system of marking plates with speed numbers must also be considered in connection with the question of temperature. If these numbers are to possess absolute accuracy, the tests should be made at some certain fixed temperature, such as 55° or 60° F., and a factor should be supplied with each number, so that the variation hat the speed of the particular plate is liable to in extreme changes of temperature may be calculated. With regard to the various kinds of actinometers in which the actinicity of the light is tested by the length of time in which a piece of specially sensitive paper assumes a certain tint, the paper is probably effected by changes of temperature to much the same extent as a slow plate, and the accuracy of the results obtained is therefore not likely to be subject to great variation.

There is, perhaps, one possible application of this discovery that may be of very great service, especially to professional photographers, and that is the use of a hot backing to printing-out papers when printing in very cold weather. Captain Abney has not said anything on this point as far as we know, but some experiments in this direction might give useful results. If the time of printing could be reduced one-half this would be a great gain, for at present printing by daylight in the winter months is a very tedious and unsatisfactory operation. There would be little difficulty in arranging that hot backing to the paper if any good results are to be thereby obtained, and some of our enterprising manufacturing firms would not be behindhand in placing the necessary appliances at the disposal of photographers.

It would be necessary to well varnish and warm the negative, and the paper should also be warmed and rendered as dry as possible before being placed in contact. If these points are not attended to results disastrous, both to the negative and the print, may be expected.

For experimental purposes the paper might be backed with a hot pad of thick flannel, and the heat kept up by means of a moderately warm flat-iron applied to the back of the pad.

MARIOTYPE.

Carbon Printing by Pressure.

[THE announcement that an English firm of trade printers had recently delivered 500 carbon prints of large size to the order of a prominent railroad company gives interest to the subjoined description of a forgotten process, taken from the *British Journal of Photography*. As our contemporary points out, Mariotype suggests the basis for a process capable of giving a large number of carbon prints in a very brief time, hence its possible usefulness for commercial purposes to-day.—ED. W. P. M.]

We have received a letter from a correspondent, asking for details of the carbon process by pressure. He evidently refers to one of the two modifications of the carbon process, described by the late Mons. A. Marion, thirty years ago, and named by him "Mariotype by Pressure." As this modified method of working the carbon process has, so far as we are aware, received but little attention since it was first described by its inventor, we reply to the querist here instead of in the limited space available in the usual column. Another reason for doing so is that the calling of attention to an old yet workable process may stimulate experimentalists with modern ideas to give attention to the method. By it the inventor claimed that an unlimited number of prints may be obtained by one exposure to the light, and that fifty prints may be obtained in an hour. The process is based upon the property that bichromated colloids have of transmitting the action of light, set up in them, to other colloid bodies that have not been exposed to light at all, as in the ozotype process and some of the methods de-

scribed during the past year or two by Mr. E. W. Foxlee. Briefly, the "Mariotype process by pressure" is this: A sheet of plain gelatine paper is sensitized on a 4 per cent. solution of bichromate of potash and dried. It is then exposed, when a visible image is obtained. The exposed print is then put into a 2 per cent. solution of bichromate of potash. In this the parts not acted upon by light swell up, while those that have not remain as hollows in proportion to its action. The print is then taken from the bath, freed from all superfluous solution, and is put into a press for printing. A letter-copying press may be used if the paper be put upon a piece of plate glass to support it. The superfluous moisture having been removed, the print is sponged over with a 2 per cent. solution of bichromate of potash containing 2 per cent. of chrome alum, and the superfluous dried off with blotting paper. A piece of unsensitized carbon tissue is then laid on, and the two squeegeed together for two or three minutes, and then removed. The print, which we may call the matrix, then undergoes the same treatment with the chrome alum and bichromate solution, and other impressions taken to the number desired. These next receive a slight exposure to light. They are then put into cold water, together with a piece of single transfer paper, the two brought into contact, removed, and then squeegeed together as in mounting prints for development in the usual manner. M. Marion used coagulated albumenized paper, but the ordinary single transfer paper will answer as well. After resting for about the time carbon prints are usually allowed—ten minutes or a quarter of an hour—they are put into warm water at a temperature of from 100° to 120° F., and developed after the manner of carbon printing generally. In this method of working it will be seen that one exposure of light suffices for any number of prints, as in the case of the collotype process, which this process of M. Marion somewhat resembles, except that a fatty ink is not employed. The process, as we have already intimated, appears to have received very little attention since it was first described before the London, now the Royal, Photographic Society, but it may well be worth the while of experimentalists, with our modern knowledge, to devote some attention to it now, as it seems well adapted for producing a large number of carbon pictures in a very brief time, and, as the specimens shown by M. Marion proved, of excellent quality. The full text of M. Marion's paper will be found on page 242 of the *British Journal* for 1873.

ONE OF THE PRINCIPAL CAUSES OF FADING IN PHOTOGRAPHS, AND A RELIABLE MOUNTANT.

BY A. J. JARMAN.

When one looks back over a period of about thirty years in the line of photography and examines the various kinds of prints produced, it will be noticed that large numbers of these photographic impressions have not only turned yellow, but have almost disappeared from the paper.

Among the photographs produced in years past, by far the largest number were made upon albumenized paper prepared and sensitized in various ways. There were many ways of making up an albumenizing solution, many photographers adhering to their pet formulæ. In the cases where ammonia was largely used, particularly in preparing the nitrate of silver bath with ammonia nitrate of silver, although prints could be rapidly made upon paper sensitized with such a solution, the paper being extremely sensitive to light, these prints have, in the large majority of cases, faded almost beyond recognition. The plain prepared albumen papers, containing only the chlorides of silver and sensitized upon a plain nitrate of silver bath, are the prints that have withstood the ravages of time far better than any papers treated with ammonia.

The plain salted papers used previous to albumen have in some cases withstood the action of the atmosphere and time, but only when treated and prepared in the

simplest manner with chloride of silver and a plain nitrate of silver sensitizer.

In a book published by the late Henry Fox Talbot, *The Pencil of Nature*, the illustrations were made upon plain salted paper. These prints have withstood the test of time for fifty-one years, and, strange to say, have not faded except where they were held by paste at the corners.

The strength of the nitrate of silver bath used to sensitize this salted paper was 125 grains to the ounce of distilled water, and fixed by prolonged soaking in a solution of sodium chloride (common salt). Hyposulphite of soda as a fixing agent had not been discovered at this early date. It was not discovered that hyposulphite of soda proved to be a fixing agent for papers containing the salts of silver until the 14th of March, 1839, by Sir John Herschel. A point is now reached that proves beyond question that one of the principal causes of the fading of a photograph is due to the paste employed as a mountant. The above-mentioned prints, made by Fox Talbot, prove this, while to-day it is also well known that the mountant is a cause of fading in collodion papers, as well as many others.

The employment of freshly-made starch-paste has been the mounting material almost invariably, yet it is well known that prints of nearly every kind have shown signs of fading in a very short time after being mounted with such paste freshly prepared, while other prints so mounted have withstood well the action of time. Prints by the thousand have faded from the effects of hyposulphite of soda contained in the paper forming the card-mount, this chemical being used as an antichlor, so termed by papermakers to correct the chlorine compounds employed in bleaching many of the white commercial papers.

Assuming that the prints have been toned, fixed, and washed correctly, the most important item required next is a good, reliable mountant. When ordinary starch or flour-paste is used, time and again, when fading sets in, the marks of the brush employed in pasting become visible through the print, and show up in a manner most marked upon the surface of the print. This sometimes happens in the course of fourteen days, the marks being very decided at the end of a month. The writer has albumen prints in his possession, made thirty years ago, mounted with a special starch paste. These prints are not in a faded condition at all. It is not unreasonable to presume that they are likely to last another thirty years, and be in good condition. One of the principal causes of mounted prints fading is the imperfectly-made paste used for such mounting. When the paste is imperfectly cooked a process of fermentation sets in known as acetous fermentation. This will also commence in paste that has been well cooked after a few days. The result will be that if photographs are mounted with such paste, the acid products of the fermentation will attack the organic compound of silver that forms the photographic image. It will make no difference whether the image is in a collodion film or not, fading will set in and the image will eventually disappear.

The following method of making a mountant has withstood the test of many years. Not a print has been known to fade where it has been employed. :

In the first place an enamelled iron saucepan must be kept for paste-making only, of the capacity to suit requirements. Proceed as follows: Pour into a clean saucepan, described above, say three-pint capacity, four or five ounces of filtered water. Add thereto two drachms of salicylic acid. Place the saucepan with its contents over any source of heat, so as to bring the water to boiling point. This is to dissolve the salicylic acid. It will not be necessary to stir this, only to remove the saucepan and shake it around. Add to this one pint or twenty ounces of cold water. Weigh out five ounces of common laundry starch. Place this in the saucepan ; then stir well with a clean stick or silverplated spoon until the starch and water are well incorporated. Place the saucepan over, say, a gas-heater and continue the stirring without intermission until the mass commences to thicken. Now stir rapidly and remove the saucepan. Still continue the stirring for a short time and pour the contents into a clean basin, scraping the remainder of the contents of the saucepan into the basin. Stand aside to

cool, which usually takes several hours. When quite cold (not before) lift the thick skin that forms upon the top and throw it away; then wring the cold paste through a piece of clean-washed cheese-cloth into another basin or jar. The paste will present a pink appearance. This is of no consequence. All is now ready for use. Paste made as above possesses a structure altogether different from ordinary paste. Its sticking qualities are excellent. No acetous fermentation whatever will take place and no fear of fading. To remove a print when once fixed with the above is almost impossible.

[Mr. Jarman sends us with the above a print mounted with the starch mountant mentioned some twenty-five years ago. The print is apparently as fresh as when first mounted.—Ed. W. P. M.]

TWO METHODS OF STRIPPING GELATINE NEGATIVES.

BY HAROLD HOLCROFT, IN "THE PHOTOGRAM."

Many processes of varying degrees of excellence for stripping the films of gelatine negatives have been published, but if it is desired to accomplish the purpose, with no alteration to the film, with no great demands upon the manipulative skill of the operator, and in the minimum of time, there is still room for another process or two. The wet film of a gelatine negative which is being stripped with an aqueous solution is a delicate object, instinct with as natural a perversity as a living thing. It will usually extend tolerably uniformly, but not always so, even if its previous history in development, etc., has been normal. Occasionally certain parts of the film expand more than the rest and cause distortion or troublesome buckling. The reason of these irregularities in a film which has been normally treated requires some investigation, but inequalities in thickness appear to be the principal cause.

The use of hardening agents, such as formalin or chrome alum, either previously or in conjunction with the stripping fluids, reduces the extent of the expansion and makes the film tougher to handle; but, unfortunately, it does not entirely cure the occasional irregularities in expansion, and the use of hardening agents is not without its drawbacks from more than one point of view.

Very slight contact of warm fingers with a wet film causes local expansion and more or less permanent damage, and anything in the nature of forcible pulling of the film leaves injuries which are difficult to repair. This statement is made with the full knowledge of the extraordinary violence to which a Cristoid film may be subjected in development without apparent injury; but, then, Cristoid films are quite different things to manipulate.

The length of time occupied in most processes for stripping before the negative is dry and ready for use is a disadvantage to the professional, although not so important a matter to the amateur.

Some years ago a very ingenious process was invented by Mr. E. C. Middleton, which got rid of most of the difficulties in stripping gelatine films from glass, and so remarkably expeditious are the operations that, as frequently demonstrated, it is possible to strip three negatives and have them dry and ready for printing within twenty minutes. This process has been worked commercially for some years and is now published for the first time, with Mr. Middleton's approval. It is based on the use of wood alcohol with a very small proportion of water, to which are added at the time of use a few drops per ounce of hydrofluoric acid. The film can scarcely be said to be wet with water at all; it is, consequently, tough in manipulation and dries quickly. Mr. Middleton's instructions for procedure are as follows:

1. Should the film be varnished all traces must be removed; if the varnish be of resin or shellac, wood alcohol will suffice, preferably adding a few minims of ammonia; if the varnish be of collodion or celluloid, acetate of amyl should be used as the solvent.

2. With the point of a pocket-knife, guided by a straight edge, cut entirely through the film to the glass, a clean cut

all round the negative about one-eighth of an inch, or even less, from the edge of the plate. As the rebate of the dark slide is as wide as this it will not reduce the size of print the negative will produce. This freed margin serves two purposes. In the first place these strips, by their looseness, serve as a safe guide as to the general freeing of the film from its support, and further render the process safer, because, in coating the plates with emulsion, some inevitably overflows the edges and adheres with great tenacity to the roughness left by the operation of cutting the glass. It is not always necessary, especially in small sizes, to cut all round the plate, as small sizes are usually coated and dried in large sheets and afterward cut up, and in this case there will be no special adhesion on the edges cut after coating; but as such edges are not always readily distinguishable it is, perhaps, better to cut all round.

3. Level a piece of plate glass with three small wedges; surfaces other than glass may be used, but as there is a subsequent use of the squeegee it is well to use a surface known to be flat. A spirit-level may be used if handy, but is not essential, as will be explained. Upon the levelled surface, in a good light, place the negative film, side up.

4. If stripping a whole plate, take a small quantity, say one ounce, of a stock solution of:

Wood alcohol, or Columbian spirit	25 ozs.
Water, 1 oz Glycerine, 1 oz.	2 "

in a vulcanite or gutta-percha beaker or developing cup (such as was used in the old collodion days), and to this add from 6 to 30 minims of commercial hydrofluoric acid—not that known as the white acid. An exact quantity of acid is not essential. The acid found in commerce varies greatly, and its age seems to have some influence. Within the limits given the only variation found in working will be in the time occupied in loosening the film. Pour onto the negative as much of the solution as will remain upon it without overflowing the sides, coaxing the solution up to the edges with a strip of paper. The flow of the solution will indicate any fault in the level of the plate, serving as a spirit-level in adjusting the wedges.

5. In a time, variable with the strength of acid, hardness of gelatine, and other circumstances—usually four to six minutes—the bordering strips of film that have been divided from the rest of the negative will be found quite loose on touching with a knife-blade. Remove these, leaving no particle to adhere later onto the film. The facility with which the loose strips are removed will form a reliable and accurate guide as to the looseness of the whole film. Should the first strip require even the slightest force to remove, allow another minute or two before trying the second strip, and so with the third and fourth, if necessary, keeping the plate well covered with fresh solution if the time is sufficiently prolonged to allow of the evaporation of that first applied.

6. The next stage may be varied according to the size of the negative. Up to whole plate it is perfectly safe to proceed as follows: Place the point of a knife under one corner of the film, and with a rubber finger-stall on the first finger of the left hand grip the film between the finger above and the knife-blade below, and boldly turn the film back upon itself until the corner is superimposed upon the corner diagonally opposite, the corners being face to face; then return it to its normal position. This shows that the greater part of the film is free. Turn back in the same way each corner in succession.

Owing to many glass plates bearing upon their surface rough spots to which the film adheres, it is essential to be assured of the entire freedom of the film before proceeding further. Where a plate exceeds whole-plate size a fine copper wire, stretched upon a bow of cane, may be used. Lifting a corner of the film with the point of the knife, the stretched wire may be passed diagonally under the film between it and the glass. This absolutely proves the looseness of the entire film. On no account use the bare finger to lift the film, as the heat or moisture, or both, will usually slightly buckle the film at the point touched.

7. Assured of the looseness of the film, tilt the levelling plates slightly to turn off all the acid solution possible, and pour over the film some of the stock solution, *minus* acid, and repeat this. If the film should have

been a stubborn one or much acid used, a few minims of ammonia may be added to the last wash of the stock solution to neutralize any acid left in the film. This is especially desirable in the case of collotype work.

8. The next proceeding will depend upon whether the negative film is to be reversed or not. In either case have at hand a glass plate, destined to be the final support of the film. With novices it may be better to take a plate a size larger than the one stripped as a final support. This can be cut down later, if desired. This plate should be coated with an extremely thin film of gum arabic, dissolved in water —a solution so thin that, when dried, it is only by applying a moist finger to one corner that the prepared surface can be ascertained. Assuming that the simplest form has to be gone through—viz., transferring the film from a cracked plate to a sound one—take a few sheets of smooth paper of good quality, say best foolscap. It must be plain white, as the colored lines on the "ruled" paper are soluble in the solution and will mark the film. Pour upon the plate further stock solution without the acid and lower upon it a dry sheet of paper, applying it as one would do transfer papers, etc., in the carbon process, and squeegee lightly. Run the blade of the knife under the film and with it lift one corner of the film; turn the transferring paper back diagonally from the uplifted corner and the film will adhere to the temporary support. The plate that is to receive the film should now have a pool of stock solution poured on its centre on the gummed side, and the film still holding to the paper should be lowered, centre first, and lightly squeegeed.

The solution serves two purposes: it prevents air-bubbles, and the small quantity of water present serves to moisten the film of gum and thus cements the film upon the glass. Should it be required to reverse the negative lay the paper bearing the film upward on a glass plate and pour some solution, *minus* acid, upon it. Lower upon the film a second sheet of paper, lift up the two papers with the film sandwiched between them, turn them over and remove the first paper, and transfer to the glass, as previously related.

Some Further Notes.—If the coating of gum is thicker than described the film is liable to crack off its support when dry. If the film needs protection on its final support the best varnish is a collodion or celluloid one. Where a negative has been retouched upon a medium the retouching will be lost on removing the medium before starting to strip. Where a negative glass is cracked in many places, especially if small, it is well to take a spoiled negative of the same size, slightly damp the film, and place the cracked negative upon it, and allow to dry before starting to strip. This holds the cracked glass well together and gives one something firm to handle. In cases where the film as well as glass is broken or torn, especially if the portions are wholly separated, after mounting the pieces upon the gelatine plate, as described, it is well to coat the negative with an enamelling collodion and allow it to set, but not to dry, before placing upon the levelling stand and proceeding to strip. This secures the loose pieces in position, as without such restraint they are liable to float asunder. The collodion can afterward be removed by means of ether and alcohol, or amyl acetate, if required.

After some practice in working Mr. Middleton's process I have introduced a few modifications, the principle of which consists in the use of temporary supports made of paper soaked in paraffin wax instead of plain paper. These are made from thin, not too highly sized paper, which is soaked for half an hour in an enamelled or clean metal dish in the melted wax until the paper is as translucent as it can be made. It requires considerable time to drive the last traces of air from the substance of the paper. The sheets are then, one by one, raised very slowly out of the hot wax, so that the surface tension may strip all the superfluous wax from the paper. They are held for a moment or two until they are set, and are then kept flat without creases for use.

These waxed supports have the great advantage over plain paper that they do not buckle or give trouble when wet with the spirit mixture. They remain firm and flat however prolonged the operations, and their translucency allows the gelatine film to be placed accurately upon the new glass,

which may be the same size as the original glass plate. I consider that their use eliminates most of the few chances of failure in Mr. Middleton's process. In melting the wax due precautions should be taken against a possible fire.

Instead of a copper wire I use a white silk thread fastened to a very light cane, like a bow, the thread being upon the extreme ends of the cane, so that the thread can be easily passed below the film, which could not be so conveniently done if the ends of the cane projected beyond the thread. In using the bow no force must be used. Its office is not to remove the film, but merely to ascertain that the film is loose upon the glass. Not possessing an ebonite cup, I use a small-lipped glass beaker in which some paraffin wax has been melted, so as to coat the inner surface and protect the glass against the acid, and I make a point of stirring with a wooden stick after the acid is added. The hydrofluoric acid is best taken from the bottle by a glass pipette, made to deliver 10 minims from the mark. The pipette must be dipped into melted wax to protect it from corrosion.

In using the squeegee the action must be very gentle, so as not to distort the soft film, and the waxed support must not be allowed to slip in the operation, which is best accomplished by having the paraffin paper supports two or three inches larger than the negative, when the support can be held down firmly upon the board or plate-glass by the fingers of one hand while the other hand is using the squeegee.

I make it a rule never to touch the film at all with the fingers, whatever may be the size of the plate; the silk bow is used in all cases. If the bow does not easily pass extra time must be given. Any force would be likely to permanently distort the film.

In transferring from the support to the new glass the chance of air-bells is lessened if the pool of stock mixture is spread all over the new glass plate with the aid of a slip of paper. Overflowing will not occur if a little care is used. The support should be slightly bent in lowering the film onto the new glass plate so as to touch first at the centre and drive out any air-bells, since, if any happen to be present, they will show when the film is dry as marks which have some printing value.

With these modifications I have found Mr. Middleton's process expeditious, easy, and almost free from any risk of damage to the film or distortion of the image.

TELESTEREOSCOPY.

The stereoscope gives an accentuated appearance of relief only when the foreground of the picture is near the objective of the camera, so that the operator often sacrifices the clearness of near objects in order to obtain a more complete perspective effect.

Mr. Helbronner has adapted the teleobjective for telestereoscopy. In telestereoscopy there is created an artificial relief in which we see clearly successive planes that are not distinguished by the eye in nature.

With the ordinary stereoscope the distance between the objectives is about three and a half inches. It is found that the appearance of depth or relief ceases for objects more than 160 feet distant, but that a satisfactory relief is obtained for objects but 66 feet distant. When a teleobjective is used, the two views are not taken at once, but the apparatus is carried from one station to another.

For objects situated less than 325 feet away from the camera, take for the distance apart of the objectives as many centimetres as there are metres between the camera and the object; the separation of the objectives is 1-100 of the distance from the object; thus, a station situated at 100 feet will necessitate a separation of twelve inches.

But when we come to views where foregrounds are distant 300 to 400 yards, we must halve this distance. Thus, in a panoramic view when the principal subject is distant one and a quarter miles, and the foreground one-fifth of a mile, use a separation of about 33 feet. The camera must be absolutely immovable and in an identical position, with reference to the horizontal, in both views. The camera has a spirit-level attached.—*American Inventor.*

ACID vs. ALKALI.

BY CHAPMAN JONES, F.I.C., F.C.S.

THE difference between a system founded on principles and one founded on empiricism is a matter of degree only; the first has a larger foundation than the other. A principle is the essence of much and varied experience. To the superficial observer it will often appear wrong, just as the surgeon and dentist are regarded by the child as paingivers and unmitigated annoyances. But the principle will vindicate itself, and those who have fought against it or neglected it will be the losers.

Photographers too often follow a shallow empiricism. A process gives a result that appears for the moment to be satisfactory, or it saves a little time without any immediate obvious disadvantage, and it is forthwith adopted and recommended. One example of this that I wish to refer to is the use of acid-clearing and fixing baths.

When gelatine plates were first introduced they were generally developed with pyrogallic acid and ammonia, a mixture that speedily becomes very dark-colored and produces its natural effect upon the film. It was noticed that acids lightened the color, or if not too dark, practically bleached it, and so acid-clearing baths of all sorts gradually came into use. Eventually we had acid fixing baths introduced for much the same purpose, and so the acid treatment was made complete, and became very popular, without any inquiry, so far as I am aware, into the real effects resulting.

It may be said that whatever fault may be found with the acid treatment, it has proved to be convenient in practice, and not detrimental. I believe that an alkaline treatment, as given below, will be found quite as convenient, that is, not more tedious, besides being sound from a chemical point of view. And as to the acid treatment not being detrimental, that again is purely a superficial view of the case. No one knows how many negatives have been spoiled by it, for negatives are not often critically examined after they have furnished the prints immediately wanted. If at a subsequent date they are found faulty, the printing paper is generally blamed, and it is possible now to get papers suitable for almost any kind of negative. And a change that merely deteriorates an ordinary negative may quite ruin a negative made for a scientific purpose.

Excluding collodion films and ferrous oxalate developed plates, both of which are practically obsolete except for certain purely technical purposes, it may be taken as axiomatic that after development no acid bath should be used until the alkali is washed away. It is not well to introduce an acid into the film while the sodium carbonate is there, because, for one reason, the disengagement of carbonic acid is liable to loosen the film from the glass. There are other chemical changes that may take place, and it is desirable to keep the possibilities of change as few and as simple as possible. Now the washing after development is a positive source of danger. Every developer used at the present time contains a sulphite to keep the solution colorless, and during the washing this becomes more and more diluted, and so less able to do its duty. The developing agent also is diluted, but its power to color the solution is reduced very slowly. If a solution of pyrogallic acid and sulphite is diluted to various degrees and exposed to the air, it will be found that the more dilute it is the more readily it becomes colored; and other developers behave in a similar manner. This washing, therefore, that used to be considered the photographer's sheet anchor, is itself a direct source of danger; it introduces the very evil that the acid bath is used to get rid of.

And the acid bath itself is a grave source of danger. Anyone can prove for himself what I have several times pointed out, that the coloring matter, or staining matter of oxidized developers, is rendered less soluble by the addition of an acid to it—in fact, it is precipitated from the solution. Its color is lightened, and so it has generally been taken for granted that it has been removed when operating upon a negative, but instead of being removed it is fixed;

and remaining in the film, is always liable to regain more or less of its original color.

By the alkaline treatment the washing and the acid are both avoided; the oxidized developer, if any is present, is kept in a soluble form; and, therefore, in a form that will allow of its being washed away, and, as it is in its most visible form, it can easily be seen when it has been removed.

A developer ought to be so compounded and used that it leaves the film clean, and in the fixing operation it remains to keep it clean. Clearing baths ought never to be needed; but, if by accident a negative should need clearing, the same kind of treatment that is the best for keeping it clean will be the best for making it clean.

After development the plate should not be washed, but merely rinsed to remove the solution clinging to its surface, and then at once put into a fixing bath compounded in a similar way to the developer, but with hypo instead of the developing agent. It is not necessary to have the alkali and sulphite present in so large a quantity as in the developer. I have found a quarter to a fifth the strength serve well, but the exact quantity is not of great importance. A good fixing-bath for general purposes will contain in each pint: Hypo, 4 oz.; sodium carbonate, 20 to 30 gr., and sodium sulphite, ¼ oz. This solution keeps indefinitely. After remaining in such a bath until it appears fixed the plate should be soaked further in a fresh portion of the solution and then thoroughly washed once for all. By this kind of treatment the gelatine is kept clean, but if it should have become stained the fixing-bath tends to dissolve the matter that forms the stain, and so to remove it. Such a bath does not deceive, for the staining matter remains of its full visible color so long as it is present. When the film appears to be clean it really is clean, so far as can be ascertained, for the stain, if any, is in its most visible form.

Such a fixing-bath as that recommended may be used again and again until its action is slow, if that is desired; and I do not see that more can be said of the acid bath. The solution may get a little dark, but I have never known it to stain a film. When deemed advisable the small portion in active use is thrown away, the second portion takes its place, and a fresh quantity from the stock bottle is taken to form the second bath. Besides the advantages already described, such a bath retains the full fixing power of the hypo put into it, and there are no changes to take place between its constituents. In these matters, too, it is distinctly superior to any acid bath; in short, the alkaline bath has all the advantages of the acid bath and none of its disadvantages. It is the only true method of keeping gelatine films clean, and alkaline treatment is, I believe, the only way of making them clean.—*Amateur Photographer.*

PRACTICAL POINTS ABOUT LENSES.*

(Continued from page 237.)

73. The smaller the stop the more even the illumination.

74. Angle of view is the amount a lens will include in the picture.

75. A lens that can take in only a small amount is a narrow-angle lens; one that will include more if used on a large plate, a medium angle, and one that takes in a large expanse a wide-angle lens.

76. The angle of a picture is measured by the longest side.

77. There is no fixed law as to the most suitable angle to include.

78. A small angle gives a better pictorial result.

79. If a wide-angle lens has been used, the picture should be viewed from a distance equal to the focus of the lens with which it was taken; if it is not, the perspective will be wrong.

80. If a narrow-angle lens be used it can be viewed from any distance without disturbing the perspective.

81. To be ready for all emergencies a number of different foci lenses should be

* Extracted from "Photographic Lenses: A Simple Treatise." By Conrad Beck and H. Andrews. 288 pp.; illustrated. Tennant & Ward, New York.

carried, varying from three-fourths to twice the longest side of the plate, and, in addition, a telephoto attachment.

82. If the glass of which a lens is made is not absolutely transparent it will absorb a small portion of the light on its way to the plate.

83. None of the blue and violet rays must be absorbed, or the lens will be rendered less rapid.

84. There are two ways in which a lens may become deteriorated in this respect:

(*a*) The cement used to join the combinations may become yellow.

(*b*) The glass of the lenses may become yellow through oxidation.

85. Finger marks on the lens surfaces may result in brown stains.

86. Reflection will reduce the rapidity of a lens either by reflecting some of the rays that should form the image back again out of the lens or by distributing them indiscriminately into the camera, where they tend to make the picture look milky.

87. The greater the number of air surfaces the greater the chance of this result.

88. If a surface is not polished to a black polish, some of the light, instead of passing straight through, will be scattered. A surface like this is called a gray surface.

89. There are seven general types of lenses in use:

(*a*) The single non-achromatic.
(*b*) The double meniscus.
(*c*) The single achromatic.
(*d*) The rapid rectilinear.
(*e*) The Petzval portrait.
(*f*) The unsymmetrical anastigmat.
(*g*) The universal anastigmat.

90. The single non-achromatic lens is one that does not rank as a lens for serious work.

91. Its chief use is as a supplementary lens for altering the focus of those that are better corrected.

92. The single non-achromatic lens has a chemical focus.

93. The double meniscus lens has also a chemical focus.

94. This lens gives a rectilinear image—*i. e.*, no distortion.

95. The single achromatic is corrected for color, but gives distortion at the edge of the field.

96. The single achromatic is an excellent lens for landscapes at an aperture of f/11 or f/16.

97. This lens was the first in which there was any attempt made to correct for color.

98. It gives a brilliant picture over a small angle.

99. The portrait lens is made essentially for speed, and is of little use outside the studio.

100. It is prone to flare, gives only a small area of critical definition, and a very curved field.

101. The extra-rapid rectilinear is superseding the Petzval lens for the better class of portrait work.

102. The rapid rectilinear is the most widely used of all types.

103. It surpasses the single achromatic in that it is more rapid, gives a flatter field, a rectilinear image, and better definition.

104. It is an excellent lens, provided it is made by a good maker.

105. The chief difference between these lenses and the anastigmats is that the former are corrected for astigmatism and oblique aberration only over a limited angle.

106. There are two types of anastigmats.

(*a*) The unsymmetrical, with combinations which cannot be used separately and which have numerous air spaces.

(*b*) The universal anastigmats, which allow of their combinations being used separately, and cover, focus for focus, a larger angle than the unsymmetricals.

107. They are an advance on the rectilinears in that they are corrected for astigmatism and oblique aberrations over a very large angle, and can be used over this angle at full aperture without loss of definition. They are also more rapid, giving more critical definition and more even illumination.

108. They are the best of all lenses for any branch of work, and should always be used in preference to other kinds where their price is not prohibitive.

109. The telephoto is a negative lens and does not give a real image.

110. Long-focus lenses are the best for portraiture, for they give good modelling and perspective. Brilliant definition is inartistic.

111. The focus of a portrait lens should

be three times the longest side of the plate in use.

112. A long-focus single lens is excellent for large heads.

113. A rapid lens stopped down is not usually as good as a slower lens.

114. The best lens for landscape work is a long-focus one.

115. A narrow-angle picture is always more truthful than a wide-angle one.

116. Every hand-camera lens should at least have fine central definition.

117. For extra-rapid work a very rapid lens is required to allow for exposures of 1-100 to 1-1000 of a second, usually with a focal-plane camera.

118. For ordinary hand-camera work a slower lens will do to allow for exposures from 1-10 to 1-100 of a second.

119. A rapid lens, even for this work, is really best, as short exposures may be given in bad light.

120. A biplanat, rectilinear, single, or periscopic lens can be used with success if the aperture is not smaller than f/11.

121. For architectural work an exact transcript is required.

122. More than one focus of lens is a great advantage for this work.

123. All lenses for architectural work must be free from distortion.

124. A large angle of view is desirable.

125. For enlarging, a lens giving a flat field and critical definition should be chosen.

126. Equality of illumination is essential.

127. For photomechanical work the finest corrections in every direction are required.

128. The best lens is the only one to choose for this work.

129. A telephoto lens consists of an ordinary photographic lens combined with a telephoto attachment or special negative lens.

130. It is a long-focus lens, requiring only a short camera extension.

131. It possesses an adjustment for altering the focus at will, and consequently forms a series of different long-focus lenses.

132. It gives pictures of an object on a larger scale than an ordinary lens, and the amount of magnification is variable.

133. The magnification is directly dependent on the focus, and is ascertained by reference to an engraved scale on the mounting.

134. The angle of view included in the total field for a given telephoto lens is always constant, and is about 12 degrees.

135. The equality of illumination is slightly improved by stopping down the positive.

136. The depth of focus is slight, but, as in an ordinary lens, is increased by stopping down the positive.

137. The requisite exposure is calculated by multiplying that required for the positive alone by the square of the magnification.

138. The aperture or rapidity of a telephoto lens is ascertained by multiplying the aperture of the positive by the magnification.

139. The telephoto lens should not be used at an aperture less than f/72, because of the loss of definition by diffraction.

140. The positive must have rapidity and equality of illumination, giving no distortion, and be free from astigmatism and spherical aberration, as the negative element increases all errors present in the positive in proportion to the magnification used.

141. Use the lowest magnification that gives the required result.

142. Magnifiers alter the focus of the lens they are added to, and so allow objects at nearer distances than can be taken with the lens alone to be sharply depicted, even in a fixed focus camera.

143. To photograph objects at a distance of 20 feet, sharp, a 20-feet focus magnifier must be added.

144. If the supplementary lens is a negative it increases the focus of the original lens.

145. Magnifiers are optical accessories, and should be treated as such.

146. Magnifiers, when used for focusing on box-model fixed focus cameras, do not alter the actual aperture of the lens.

147. Kinematograph lenses are of short focus and must give the very finest definition at full aperture.

148. A pair of stereoscopic lenses must have identically the same equivalent focus.

149. The distance apart of the lenses affects the stereoscopic effect. The farther apart, the greater the apparent solidity.

COPYING DODGES.

BY C. WINTHROPE SOMERVILLE.

CONTRAST. The contrast of a copy (such as a faded print) may be increased by placing against it a piece of very pale-blue glass, and vice versa, the contrast reduced by a piece of pale-yellow glass.

COPYING A FIGURE OUT OF A GROUP. For copying a figure out of a group the following method is, in my experience, the best:

Get two pans or tubes of white and ivory-black moist water-colors, and mix small quantities together on a palette to produce a gray tint of more or less depth of tone as the strength of the print to be painted upon. With this proceed with a fine camel-hair pencil to work round the edge of the figure and to roughly cover the other portions not wanted, and allow to dry. If the print were now copied, the resulting print would look very rugged and unsightly, so to equalize take a larger brush, like a flat-pointed swan-quill sable, charged with the color in a good flowing condition, and proceed from the outline of the figure outward in good flowing sweeps to cover the rough work without removing it, then breathe upon it, and continue to do so until the work "falls together" and is quite even. It will then dry evenly and with a good matt surface. By exercising one's judgment in mixing the colors, a background of any shade may be obtained. When the print is copied and done with, the paint upon it may be instantly removed from the surface by wiping with a damp sponge or a soft piece of rag.

GRAIN. 1. Focus sharply and expose for about half the necessary time; then rack the plate (not the lens) slightly out of focus (beyond the focal plane), give a brief exposure, rack slightly forward of the focal plane, and again expose. The resulting negative will be free from grain. Underexposure exaggerates grain.

2. The print is placed inside a room about three feet from the open window, and facing it; the camera attached to the window-sill, and the operator working in the garden. It is a little troublesome, on account of the journey round into the house, when the original has been touched, but the lighting can hardly have been improved upon.

3. Have the lighting as flat as possible and to give a full exposure.

4. Diffusing the light on the copy by the interposition of a screen, made with tissue paper, reduces grain to a very great extent. Glossy prints may also be copied in this way.

5. The surface of the print may be brightened with encaustic paste, which fills up the fine spaces in the paper. To make such paste, white wax (eight parts) and gum elemi (one part) are melted together by gentle heat, and oil of lavender (six parts) poured in very slowly with constant stirring. The whole is then stirred until cold. A little of this is applied on a bit of flannel, and the surplus polished off with a piece of old cambric.

MINIATURES. Of all troublesome things to copy, miniatures, or other pictures from which one must not remove the convex glasses with which they are covered, are the worst. It seems that, light them how one will, there is sure to be a reflection. I have got over this trouble to a great extent by hanging tissue paper round the miniature; in fact, placing the same at the bottom of a tunnel of tissue paper; this softens the reflections a good deal.

The Photo-Miniature gives a method of copying daguerreotypes where reflections give trouble:

"In copying daguerreotypes in their cases it is usually advisable to turn them on one side. If fixed to an open board or support, reflections will undoubtedly give trouble, and these are not always visible on the ground-glass. It is, therefore, usual to copy them placed at the end of a fairly deep box lined with velvet, the lens being pointed at the picture through a hole cut in a black-cloth flap, which covers the front end of the box. Light is admitted through openings at the side of the box. The exposure is necessarily protracted. Care must be taken to avoid movement during exposure. If the marks of the buffer—fine horizontal lines—are seen in the result-

ing negative, the plate should be placed vertically and rephotographed, when these lines will usually disappear."

CRACKED OR INJURED GLOSSY SURFACES. Prints with these faults should be lightly coated on the face with glycerine, squeegeed on to the ground side of ground-glass, and photographed by diffused light.

SEALS, DOCUMENTS, ETC. Harold Baker advocates the following method: "The exposure necessary for a seal of a non-actinic color is far too long for the rest of the document, and some method is necessary to keep back the exposure of the parchment. A good method is to pin the deed on a board and cover the whole with a piece of black paper, having a hole in it just the size of the seal. I have given as much as an hour to the seal before exposing for the document. The black paper is taken away when the seal has received sufficient exposure, and a comparatively short exposure given to the parchment. While the paper is being removed the lens must not be capped, as the camera may be moved, but a black hat or cap may be held over the lens without touching it. Brown paper acts as well as black for masking the parchment. Documents having dark-brown stains upon them may be copied in a similar manner by tearing holes in a piece of brown paper to correspond with the stains. The paper is then pinned over the deed so that the stains are uncovered. By this means the writing covered by the stains can be deciphered in the negative. When it is estimated that the stained parts have had sufficient exposure, the lens is covered, the brown paper is removed, and a normal exposure is given for the rest of the document."—*News Year Book*, 1903.

THE ESSENTIALS OF ARTISTIC PHOTOGRAPHY.

IN speaking on the subject of artistic photography at a recent meeting of the Edinburgh Photographic Society, Mr. T. N. Foulis said there is difficulty in determining when a picture is artistic. A well-known art critic has somewhat convincingly said that "never have two different persons seen the same picture, because a person does not really see things as they are, but as he is;" it would appear that what is deemed artistic by one may fail to appeal as such to another, so I will not make any further attempt at definition.

Trying to answer the question of what then is required of a picture, we find ourselves again in difficulties; while Ruskin maintains that great art must express great ideas, Tolstoi says that art exists merely to transfer emotions of joy or pleasure, and the greater the pleasure obtainable the greater the picture; but it would burden my paper overmuch to discuss to what extent one may agree with the former or the latter, these being too intricate questions to be here introduced.

There is one thing undoubted, and that is that the primary function of a picture is to produce emotion, and to quote Hazlitt: "That which conveys the strongest sense, of pleasure or power, of the sublime or beautiful," is of the highest artistic quality. *Beauty* in line and form is what makes our finest examples in works of art; and that is naturally also essential in producing the artistic through photography.

The best means of mastering the principles and training our sense of line is by means of the study of pictures. . . . In photography our limitations impress us that perhaps there is nothing more essential for one's success than simplicity of composition: in art few better examples of noble simplicity are to be found than in the familiar pictures of Millet.

In his, "The Angelus:" two plain figures softly silhouetted against an evening sky: their reverence you feel, you almost hear the sound of the Angelus. In another, "The Sower," swinging his lumbering body over the rough open soil on a bare hillside, each line has such a relation to the others as to combine and convince one of his action, while in the former every line suggests rest, and with such subtlety as to prevent the slightest idea of what we call woodenness. A third is "The Gleaners." The composition of this picture is extremely simple: the figures are arranged so that attention with the aid of the higher tones is brought at once to the

point in the picture where the spirit is grasped, the poetry felt, and the beauty of rhythm of line, which is here especially worthy of study, is at once apparent. I need not go further in pointing out its beauties; they are obvious to all, and are only the more numerous the more familiar one is with the picture.

To attempt subjects such as these is to us photographers somewhat difficult, and many results are at first only examples of arrested movement. With experience, however, one soon gets nearer success, and above all with the help from the study of pictures comes greater ease in the forming of good line composition. . . . In dealing more especially with masses in landscapes, there is Corot's "Dance of the Nymphs." In it there is very little detail, "the artist's object being not to get the physical facts, but to express the emotions with which these facts affected him." Enough suggestion of detail, however, is given to stir the imagination to realize the existence of it, and the fact of its being omitted only emphasizes those more important features, namely, the bold, beautifully shaped, velvety masses of foliage, of sunlight and shadow; and I ask why do we not try in our work to produce broad studies like this and make an attempt at the suggestiveness of detail in shadow which so delights one in this picture? At first some may think the shadows too black, but this, it will be found, is not so. "A shadow may be twice as deep in one picture as in another," says Hazlitt, "yet be almost imperceptible from the graduations that lead to it and blend it with the light."

It may be said it is all well enough talking of these essentials with reference to works of art, and it must be confessed that the want of color leaves an immeasurable gulf between the artist and the photographer, yet notwithstanding have we not left many possibilities for the making of artistic pictures? Besides, is not the power of suggesting color one of the chief points of a good photograph?

The etcher and the engraver produce works of art, and why so seldom the photographer? He, too, has within his power the imprinting of a sky, a figure, or the increasing and decreasing of light and shade the better to suit and compose his picture, and by so doing we widen our limitations: go beyond the merely mechanical, and allow to photography also the worthiness of being an art.

Moreover, we do not always want the actual thing depicted in our photographs; getting the impression it has made on us is much finer, and the truth of this is seen in the result of a snapshot taken of a moving person, who, instead of appearing to be walking, often looks like standing on one leg and holding the other in the air in some impossible fashion. What we really require is an expression of the composite result of the motion, and moving objects are a much-needed help in adding interest to photographs.

Again, through the lens a landscape does not even appear as the photographer himself sees it, and if the ultimate desire be to produce an exact representation of what is seen, it is almost always necessary to alter the photographic result so that it may convey suggestion to others of the atmospheric effect or other beauty for which very purpose it was taken.

The aim being to produce a picture, the sooner all squeamishness about faking be cast aside the better, and an attempt made by whatsoever possible means to gain an artistic effect; the highest endeavor in photography is to make an artistic picture, and the end surely is justification enough for the means.

I have thought it unnecessary to deal with the rudiments of composition; these have been heard as well as read about by all who are attracted to the artistic side of photography, and to whom alone what I have said is of material interest. My intention has been more especially to point out a neglected influence which is eminently beneficial in fostering the highest aim in photography. Let us study examples of good compositions, let us try to imitate them, and through our failures better learn what are the essentials of an artistic photograph. It is only through study we can improve our sense of line, the shape of form, and their union into one composition, and these are the main essentials in producing artistic pictures through the aid of the camera.

THE PENNSYLVANIA CONVENTION.

THE Second Annual Convention of the United Photographers of Pennsylvania, West Virginia, Maryland, and Delaware, was held at Harrisburg, Pa., June 2d to 5th inclusive. The attendance was disappointingly small, but much interest was evinced by those present. The hall was attractively decorated with the pictorial displays, some six hundred prints being shown in competitive and complimentary classes. In all classes the average of quality was unusually high, very little poor work being in appearance. Among the complimentary exhibits were pictures from J. Will Kelmer, Alfred Holden, Miss Mary Carnell, D. Rosser Studio, Stevenson & Co.; E. W. Brown and W. H. Towles. The first few hours of the opening day were occupied in social greetings, the reception of members, visitors, etc.

The first business session was called to order at 3 P.M., Tuesday, by President Clark, who, in his annual address, urged a closer recognition of sound business principles as the basis of success; the necessity of studying good work as a means of growth in skill; the incorporation of the Association in order to put it upon a firm financial base, and the enthusiastic support of the photographic department of the World's Fair at St. Louis in 1904. Various committees were then appointed and the meeting adjourned. Wednesday morning was given up to the manufacturers and dealers as well as to demonstrations of methods and practical work. Almost all the principal firms in the trade were represented. The business session of the day met at 2.30 P.M., several ex-presidents of the Association occupying the platform. After preliminaries the President I introduced, Mr. Felix Raymer, who delivered a very instructive lecture on "Portrait Lighting and Developing the Negative." This was followed by an address from Geo. M. Bolton, Secretary of the Photographers' Association of New England, who spoke particularly of convention work and the good to be derived from fraternal feeling and fellowship. Alfred Holden, ex-President, was introduced and delivered a very able address, giving the members much good advice—not to be selfish, but by helping "the other fellow" to help themselves. F. Dundas Todd was next discovered in the audience and brought to the platform for a few remarks. The President then extended an invitation to the members of the Association to accept the hospitality of the Entertainment Committee to visit the field of Gettysburg on Friday.

At 8 P.M. Mr. F. Dundas Todd of Chicago, delivered his lecture on the "Elementary Principles of Composition and Lighting." This lecture was illustrated with the stereopticon, and was received with wild enthusiasm.

Thursday's meeting was called to order at 11 A.M. After the minutes had been read and approved, the report on awards was read as follows:

Slater Trophy. J. B. Schriever, Scranton, Pa.

Buchanan Luxo Prize. First Prize: $25 in gold, Edward Kottman, Altoona, Pa.; Second Prize: No. 2 flash lamp, H. H. Deatrick, Altoona, Pa.

Genre Class. First Prize: Bronze figure, A. T. Proctor, Huntington, W. Va.; Second Prize: Silver medal, L. V. Kupper, Edinboro, Pa.; Third Prize: Bronze medal, J. B. Schriever, Scranton, Pa.

Special Class. First Prize: Gold medal, Stevenson & Co., Atlanta, Ga.; Second Prize: Silver medal, W. H. Towles, Washington, D. C.; Third Prize: Bronze medal, W. H. Hoffman, Savannah, Ga.

Miniature Class. First Prize: Silver medal, Miss Edith A. Ritenour, Uniontown, Pa.; Second Prize: Bronze medal, G. Graff Haverstick, Frostburg, Md.

Landscape Class. First Prize: Silver medal, A. T. Proctor, Huntington, W. Va.; Second Prize: Bronze medal, L. V. Kupper, Edinboro, Pa.

Class "A." First Prize: Gold medal, Miss Kathryn Jamison, Pittsburg, Pa.: Second Prize: Silver medal, A. T. Proctor, Huntington, W. Va.

Class "B." First Prize: Silver medal, E. E. Dexter, McKeesport, Pa.; Second Prize: Bronze medal, H. S. Betz, Shamokin, Pa.

Rating Class. Gold medal, Edward Kottman, Altoona, Pa.: Silver medal, H. O. Mott, Coatesville, Pa. Bronze medals,

J. Leonard Gates, Charleston, W. Va.; M. A. Blazier, Lebanon, Pa.; G. Graff Haverstick, Frostburg, Md.; N. Shulman, Baltimore, Md.; A. L. Rogers, Chambersburg, Pa.

The awards were presented by Alfred Holden, with appropriate remarks to all.

Officers were then chosen for the coming year. There was a contest for President, E. W. Brown, of Beaver, Pa., receiving twenty-six votes and J. E. Griffin, of Wheeling, W. Va., receiving eighteen votes. Mr. Brown was declared elected. The balance of the officers chosen were:

First Vice-President, John Betts, Jr., Baltimore, Md.

Second Vice-President, A. T. Proctor, Huntington, W. Va.

Secretary, Charles Gates, Lebanon.

Treasurer, W. J. Goldman, Reading.

J. Will Kellmer, of Hazleton, on behalf of the Association, then presented the retiring President, T. B. Clark, with a handsome candelabra.

At the afternoon session the committee to select the place of the next meeting reported in favor of Harrisburg as being the most convenient and most accessible place, and the recommendation was unanimously adopted.

An amendment to the constitution was adopted changing the name from the Photographers' Association of Pennsylvania, West Virginia, Maryland and Delaware, to Pennsylvania Photographers' Association, with the proviso that all photographers of Delaware, Maryland and West Virginia shall be eligible for membership. The change was made on account of the awkwardness of the old name.

W. I. Scandlin, of Brooklyn, N. Y., spoke on the subject: "Can the Business Conditions of the Average Photographic Studio be Improved?" In part he said: "Every photographer who expects to succeed must have a definite policy as to the line of his work. See that your plant is economically arranged. Avoid waste. Keep in touch with the markets, for people appreciate a good thing, and to give them good things we must keep up to the times. The key to the situation is better work.

"Make the studio the art centre of the town so as to attract people, and from admiring artistic pictures they will come to learn that they want pictures. Make your advertisements attractive, not mere catalogues."

Mr. Scandlin handled his subject in a very able manner, and throughout the audience could be seen members with their note-books dotting down his suggestive pointers. After Mr. Scandlin's lecture, Mr. J. B. Schriever, of Scranton, Pa., spoke on his methods of "Teaching Photography by Mail."

On motion, which was seconded, the Association then adjourned *sine die*. The members, however, met on Friday morning and journeyed over the historic battlefield at Gettysburg, thus spending an enjoyable day.

THE IOWA CONVENTION.

THE Thirteenth Annual Convention of the Photographers' Association of Iowa was held at Des Moines, May 19th–22d. It began with field sports and ended with a lecture by George G. Holloway, Secretary of the National Association. The gathering was generally spoken of as one of the most successful conventions held by the Association. The display of pictures was admittedly the finest ever exhibited in this State.

On Tuesday afternoon, May 19th, the duties of the Convention were laid aside and field sports were indulged in. In the morning the conventioners gathered in Edinger's studio, when Professor Felix Raymer demonstrated and explained the correct method of handling the lighting of the sitter.

The first session of the Convention was held at 10.30 on Wednesday, when Governor Cummings welcomed the conventioners. M. W. Starks, president, gave his annual address. George G. Benson, of the Seed Dry Plate Company, followed with an instructive address on the principles of lighting. He demonstrated his principles under Webster's skylight. Among the notable exhibits were those of Webster; Brandt Bros., Davenport; J. B. Hos-

tetler, Davenport; Frank Medlar, Spencer, and A. L. Child, of Grinnell. Mr. Medlar was awarded the Fell trophy. Other notable complimentary exhibits were those of M. W. Starks, of Sioux City; C. D. Pierce, of Ottumwa; Kdagihn, Cedar Rapids, and Townsend, of Muscatine.

Among the well-known men present were Professer Bissell and George G. Holloway, Secretary of the National Association. Mr. Holloway's lecture on "The Advantages of Conventions" was one of the features of the Convention. The demonstrations of Mr. N. A. Corning on Thursday morning and Mr. Hart on bromide enlarging were very well received.

The exhibits of F. W. Townsend, of Iowa City, received the highest rating in Class A; J. B. Scoles, Stewart, Iowa, Class B; W. C. McIntyre, Ames, Iowa, Class C; W. A. Sanford, Dysart, Iowa, Class D; Chas. Wilkinson, of Tama, in the Miniature Class; Spurr, Decorah, gaining the Interstate Exhibit prize. The Grand Portrait Prize was awarded to E. C. Pike, Indianapolis, Ind.

The election of officers resulted as follows: President, W. J. Reynolds, Washington; First Vice-President, W. H. Dinsmore, Anita; Second Vice-President, C. H. Gilbert, Independence; Treasurer, H. A. Baldwin, Fort Dodge, and Secretary, C. F. Townsend, Muscatine.

C. F. TOWNSEND,
Secretary.

THE NEBRASKA CONVENTION.

THE Fourteenth Annual Convention of the Nebraska Photographers' Association, held in Lincoln, May 13th–15th, was the largest and most successful meeting ever held by the Association, about half of the photographers of the State being in attendance. The display of photographs was also larger than any previous year, the general quality of the work showing a decided improvement on that of previous years.

Financially, the Association is stronger than ever, and the social spirit shown was particularly gratifying, the field sports contributing an element to the Convention which will not soon be forgotten.

The city of Lincoln was again chosen as the location for the next Convention, the following officers being elected for 1903–4: President, A. C. Townsend, Lincoln; First Vice-President, John F. Wilson, Pawnee City; Second Vice-President, D. W. Wright, Nelson; Treasurer, W. P. Fritz, Fremont; Secretary, E. R. Tyson, Nebraska City.

The officers of the Nebraska State University again invited the conventioners to use the Art Hall of the University for their next meeting. This hall is particularly adapted to the needs of the Convention because of its illumination.

The list of awards was as follows:

Grand Portrait Class.—Stephenson & Co., Atlanta, Ga., gold medal.

Sweepstakes.—R. C. Nelson, Hastings, Neb., loving cup.

Interstate Exhibit.—Alva C. Townsend, Lincoln. Portrait for circular exhibit.

Standard Class.—Gold medal, R. C. Nelson, Hastings, Neb. Silver medal, Payne Studio, Hastings, Neb.

Children's Class.—Gold medal, Payne Studio, Hastings, Neb. Silver medal, R. C. Nelson, Hastings, Neb. Bronze medal, J. Leschinsky, Grand Island, Neb.

Class A.—Silver medal, Alliance Studio, Alliance, Neb. Bronze medal, O. D. Welch, Aurora, Neb.

Class B.—Silver medal, C. J. Fennel, Schuyler, Neb. Bronze medal, H. L. Boston, David City, Neb.

Class C.—Silver medal, H. Bangs, Broken Bow, Neb. Bronze medal, Fred W. Hoogland, St. Paul.

Genre Class.—Silver medal, D. W. Wright, Nelson, Neb. Bronze medal, J. Leschinsky, Grand Island, Neb.

Smith Trophy.—J. Leschinsky, Grand Island, Neb.

E. R. TYSON,
Secretary.

Developing in Gaslight. At a recent meeting of Eberfeld Amateur Photographers' Club Herr Suss demonstrated the use of the following colored developer for bringing out the image on a highly-sensitive Perutz plate, the operation being conducted in full gaslight. The reddish tinge of the plate disappeared almost instantly in the fixing bath.

Water	100	grammes.
Soda Crystals	40	"
Commercial Rosolic Acid	0.2	"

Mix with

Phenolphthalein	0.1	grammes.
Soda Sulphite	25	"
Edinol	3	"
Water	100	"

Clean Hands. The editor of *Photography* has just been telling his readers how they should cleanse their hands. Now success in camera work depends absolutely upon cleanliness in all matters. Other factors, of course, there are; but cleanliness is a prime one, and especially cleanliness of the hands. The most careless photographer would not pour developer into a vessel wet with hypo, or toning bath into one soiled with an intensifier. His fingers, perforce, must go into most of the solutions at one time or another, and must be kept as chemically clean as possible, if they are to do so without contaminating what they touch. The writer from whom we quote points out that if the fingers are wet with alkaline solutions, they should first be washed in dilute (about 1 per cent.) acid—nitric, oxalic, or acetic. Then, if soap is used without further wetting, fatty acids are deposited in the skin, which thus becomes less liable to crack. After using mineral acids the hands should be washed with water and rubbed while wet with a piece of soap. If the acid was strong or has affected a large surface, they should be bathed, after washing, in a 1 per cent. solution of washing soda. Nitric acid destroys the epidermis so quickly that it can scarcely ever be restored to a normal condition, and the same is the case with the fumes, also with those of aqua-regia and with bromine. Iodine stains should be treated with a 10 per cent. solution of sodium hyposulphite. After working with mercuric chloride solutions it is best to bathe the hands for some time in a 2 per cent. solution of common salt, followed by soap.

Excellent varnishes can be bought, but most of them require the aid of heat. It saves a good deal of trouble to use a varnish which is free from this necessity, and the one which we can strongly recommend is a solution of celluloid in amyl acetate or acetone, says a writer in *Photo News.* The pungent odor of peardrops may prove a drawback in using the former solvent, and it is certainly not very pleasant, but the varnish is a good one, and if the plate is put in a rack it will be dry in half an hour or less. This varnish has the great merit of leaving no stickiness behind it, and it seems to make the gelatine film waterproof in a way that no other preparation does. At the same time, this varnish is excellent for lantern slides, for it never leaves any ridges on the film, and a slide protected with it will never melt under the heat of the lantern.

The Action of Various Reducing Agents. The Brothers Lumière have recently experimented to determine the action of the persulphate reducer as compared with other oxidizing reducers—for example, peroxide of hydrogen, permanganate of potassium acidulated with sulphuric acid, and bichromate of potassium acidulated with sulphuric acid. Trial negatives were made by exposing a plate in stripes or bands, so as to obtain degrees of density having a relation to the exposures. Pieces were now cut from this plate across the bands, and treated with the various reducing agents. The authors conclude that persulphate of ammonium is the only reducer which can be used in actual practice for reducing a negative without attacking the fainter gradations. In addition, the Lumière Brothers have made the following observations: 1. Persulphate of ammonium solution acts more rapidly when the negative is wet than when it is dry. 2. The action does not commence immediately, but when once commenced it progresses regularly. 3. Negatives weakened

to the required degree by means of ammonium persulphate should be immediately immersed in a bath calculated to destroy the superabundant compound, as, for example, a solution of an alkaline sulphite. In spite of this precaution the reducing action continues after withdrawal from the persulphate bath. 4. Whatever be the concentration of the ammonium persulphate solution, the ratio of reduction is the same for the various parts of the subject. 5. Fog, due to over-exposure, is not removed or appreciably reduced by the ammonium persulphate reducer.

ITEMS OF INTEREST.

Mr. Pirie MacDonald, well known to our readers as "The Photographer of Men," has installed the Cooper-Hewitt light in his studio in the Washington Life Building, No. 141 Broadway, New York. Our readers will recall the articles on this new light published in this MAGAZINE for April, 1902, and February, 1903. We commend Mr. MacDonald's enterprise in being the first to utilize the advantages offered by the Cooper-Hewitt light in photographic portraiture. Mr. MacDonald states that the light is practically equivalent to daylight in speed, expresses the values more truly, and is under perfect control. If it is possible, we will endeavor to present in an early issue an example of Mr. MacDonald's work with the new light.

From the Lamson Studio, Portland, Me., there comes to our table a portfolio of the colored platinotypes recently introduced under the name of Lamson Prints. Mr. J. Harry Lamson, a son of an old subscriber to the MAGAZINE, has for years enjoyed an enviable reputation as a skilful outdoor photographer, and these prints bear witness to his exceptional ability. The coloring has been done in a very effective way and with careful regard to harmony. For the decoration of the reception-room and other public rooms in the photographer's studio, or for home decoration, we commend Mr. Lamson's prints as worthy of the attention of our readers.

Messrs. Burke & James, of Chicago and New York, send us a copy of their 1903 catalogue, a substantial book of 216 pages, crowded with interesting descriptions and illustrations of the latest apparatus and photographic specialties manufactured by them or for which they have special agencies. The list is one of the most complete we have seen in sometime, and we commend it to our readers as an excellent reference-book. The wise photographer will obtain a copy, punch a hole through the upper left hand corner, and hang it in a prominent place in his work-room.

MR. MILTON WAIDE, whose booklet on *One Man Photography* was mentioned in these pages a few months ago, has had so many requests for an explanation of his method of working on individual lines that he has prepared a treatise on the subject, particulars of which are given in our advertising pages. The possibilities of Mr. Waide's business methods undoubtedly afford room for profitable experiment, and we are inclined to believe that his book dealing with these methods should, of itself, be a profitable investment.

SOMEWHAT late in appearance, but none the less interesting, is the booklet on *Montauk Cameras*, 1903, just received from G. Gennert, 24 East Thirteenth Street, New York. The Montauk cameras have long enjoyed a high reputation among those well fitted to judge in camera construction, and the new models offer distinct advantages over those of last year, as may be seen from the illustrated descriptions given in the booklet, copies of which can be had on request.

The suggestion by Mr. F. E. Ives, in his paper on another page, that the violet and ultra-violet rays play an important part in studio photography, give new significance to the usefulness of the Hewitt light for portraiture mentioned in an earlier paragraph.

OVERFLOW FROM "VOIGTLÄNDER AND I."

BY JAMES F. RYDER.

A DAY'S OUTING.

HAVING repaired my lost fortune, by fire, at Elyria, and accepted a good position at Cleveland, resolved to celebrate the event by a romp in the country. Park and I discussed the matter; he thought he knew just the place. So, quietly we secured team and lumber, and provided ourselves with the requirements for a dinner. A fish dinner—the fish of our own catch, and started down the river for the place he knew of, to the farm of Deacon Jones, upon the river bank toward the lake.

We arrived, and Park went in the house to secure permission to fish from his grounds. The deacon was repairing his fence near the house, and Mrs. Jones referred us to him. I followed Park to interview the farmer. We were well received by Mr. Jones, who said "Hello, Charley! How are you? How is the Colonel and your mother?" I was introduced, and Mr. Jones asked if I was the man who took likenesses at Elyria. Said he had heard of me, and, turning, asked if I thought I could take his. I told him I would be pleased to try if he would give me a chance; he replied. "Yes, I suppose so."

Mr. Park now stated our wants. Said a party of a dozen or so wished to fish and picnic on his grounds, that we had brought lumber to build table and seats; if he would like us to leave it as compensation, we would gladly do it. That we would be very glad to have him, Mrs. Jones, and his daughters take dinner with us. "A fish dinner?" he asked. We said "yes." I thought the s'y look on his face as he asked the question was significant. He said, "mother and I are too busy—the girls are free to accept if they like. Don't chop my fences up to cook your fish, and you are very welcome." We built table and seats, made a fireplace, and, with some yellow string, tied tightly around some oranges we bought, we tied them up in the trees of a little grove near by with the aid of a stepladder. Quite a tropical appearance was secured. We left at the house our dishes, food, fishing tackle, etc., and drove back home. We had invited a few friends for a fish dinner—the fish of our own catch was to be a conspicuous feature. A basket party with a bit of lunch going out, and possibly some fish to return. A jolly day by all means was to be had. We were to start from the Beebe House at 8 o'clock sharp. The Elyria brass-band wagon, which would easily seat a dozen, was our conveyance, four of Mr. Darling's smart roadsters, with Dave Houghton holding the reins, presented a fine showing. To my mind we had a delightfully happy party. My young drummer, Charley Northrop, whose efforts had so materially contributed to my mended fortunes, was given the seat of honor beside the driver. Another friend who I thought might enjoy a day in the country, and possibly record some notable incident of the day, "Voigtländer," with a few plates, was included in the party. The country was delightful in its spring suit of tender green trimmed with blossoms of white and pink Merry voices from happy hearts rippled with wit laughter, and song as we moved along past farms and fields. It was, indeed, a happy party, and was recognized as such by the farm people along the way. When we reached the summit of Reed's hill we halted to take a look up and down the river. From above, it came down with a sweeping curve, the light gray monotone of the surface broken by the rippling rapids, the sound of which was as soft music on the morning air, the trees were feathering out with a fresh charm and gently swaying in the soft spring breeze. The sky is such a clean, pure blue that thousands upon thousands of pairs of Dutchman's trousers could be cut from it, and its azure purity stood as a guarantee of a perfect day. The river in its journey toward the lake now takes a rather crooked path, and appears more sluggish and lazy since leaving the rapids. Opposite us a group of cattle, some on the banks and others in the water, make a picture of easy contentment. They have no dishes to wash, no beds to make, no baking to do. They know no scandal against our neighboring farms. They just chew their cuds, swish their tails, and borrow no trouble; whether school kept or not, was quite a matter of indifference to them. Happy Bossys!

Where the river takes its first turn beyond the cattle a tree had been underminded by the rapid current and was leaning over nearly to the surface of the river. Upon this leaning tree are two boys fishing; away down as the eye followed the winding stream we see a boat with men in it, crossing to our side; farther still between the rising banks of the river the green water of Lake Erie forming a terminal to the vista of hazy atmosphere hanging over the valley. A shout from the boys upon the tree announces to us that one of them had pulled out a good-sized fish, and this was a hint to us that our dinner was still in the river and we must be moving to secure it We start again, and away we go at a good pace until we reached the Jones farm. The girls came out to meet and welcome us. Farmer Jones showed us where to stable our horses, and we all walked down the lane to the fishing ground. As a vigorous onslaught was to be made upon the fish an organized system of management was thought advisable. Charley Park was elected general manager without a dissenting voice. Mose Gallup was elected director of weights and measures. In the installation ceremonies he was solemnly charged to be square in the discharge of his duties. If it was the catch by a pretty girl he was not to make it weigh heavier than it really was. If a fish flopped its tail while on the scales and joggled the weighing in favor of the catcher, it should be ruled "no fair." The girl that caught the very biggest fish should be entitled to first prize. The girl that caught the most fish in the first half hour should be awarded second prize. Our lunch baskets were huddled together upon the table, the fishing tackle was gotten out, and a half dozen eager anglers set to work to secure our banquet. Preparations were now pushed smartly forward by the whole party, the tables set with the dishes, and a good display of flowers adorning the board, some wood gathered for fire to cook our fish, two hammocks slung up, a bar to hang our kettles for heating water for our coffee, baskets placed upon the bank in which to put our fish as they were hauled up out of the water, a spring scale for weighing the largest of the catch, and tape-line for measuring. "Now girls," said Manager Park, "attend to your fishing—pull 'em out fast and give us a big dinner." Soon there went up six little screams from six fisher girls, and the exclamation, "Sue Park has caught a fish! Bring the scales; bring a tape-line."

All this time the fish was floundering in the grass. Weighmaster Gallup was unable to capture it at once. It was suggested that this fish be measured at first and afterward weighed. By and by it wore its energy to a minimum, and was released from the hook; the

excitement subsided somewhat. The tape-line was produced and Mr. Gallup proceeded with his official duties. The fish being liberated from the hook, evidently felt a sense of liberty and flopped when the tape-line came in contact with his glistening side. The interested onlookers crowded about the measurer and the fish to the annoyance of Mr. Gallup, who spoke in a loud voice: "Stand back! make room—give a fellow a chance!" When at last he had made the measurement and was writing down in his notebook the dimensions of the bass, with the party looking over his shoulder, the prisoner made his escape by flopping back into the river, at which there was much tumult and consternation. Nan Brown said "the jig is up now; that fish will noise it about among all the other fish, and we will not get another bite."

In the excitement of the measuring, Cassie Wooster had dropped her pole in the river. She hurriedly got a stick, and in reaching for the pole lost her balance and went floundering into the water. All the young men of the party made a rush to rescue her. Some stripping off their raiment, but before they could reach the imperilled girl she walked up out of the water. The young men declared she had not given them half a chance, the opportunities for rescuing young ladies from watery graves were so few it was a blasted shame that she should so inconsiderately spoil one. With downcast eyes she explained she was afraid the fish would bite her, and so hurried out.

Now one of the Miss Jones of the farm, the one of the winsome smile, conducted the "drowned rat" to the house for a change of dry raiment. Here let it be said, by virtue of the general manager's obligation to furnish us a fish dinner or fish for a dinner, and the situation beginning to look serious, Manager Park shouted: "A horse! my kingdom for a horse, start a messenger in hot haste to the village for a box of herring. A fish dinner we *must* have."

A general order was now issued. Taking bits out of lunch baskets was strictly prohibited. The only nibbles permissible were by the fish at the hooks. As an extra inducement the girls were required to spit upon the bait, the manager being of the belief that fish knew a thing or two and would be attracted by dew from rosy lips. Weighmaster Gallup was now called upon for an official report as to the true measurement of the fish which got away, that we might know the extent of our loss and how much our dinner had been cut short. Taking from his pocket the book containing the record, he stated, by way of preface, that owing to the restless disposition of the fish, its flopping and wiggling of its tail, the securing of close accuracy had been difficult, but, as definitely as he had been able to determine, the fish measured four and one-half inches. A vote of thanks was given him for the faithfulness with which he had performed his arduous duties. Now, by way of encouragement, Jennie Holmes pulled up a small whale, possibly five or six inches in length, but it fell off the hook about three feet above the water and made a splash. The outlook for a fish fry was growing dismal indeed. The fish didn't bite and the girls were getting discouraged. It was nearing noon, the alleged cheerfulness of the jolly party was evidently forced, but no grumbling was heard—to be hungry and jolly was a bit unnatural; but who of our party would be weak enough to whimper?

"Say! who is that coming down the lane in a wagon?" says Charley Northrop; "blamed if it ain't Bub Frary. What business has he to intrude upon a private party?"

"We'll find out first," says some one, "better not snub him." Bub was a big boy, of perhaps nineteen, but a giant. Stood six feet three; weighed two hundred and fifty or thereabouts, face beardless and complexion fresh as a girl's; just a boy and very good-natured. Everybody liked Bub, he was principally fisherman and handy at most anything. "Hello, Bub, what you got in your wagon?" I asked. "Fine basket of bass," he answered, "also some side pork, some potatoes, and knickknacks, you know—things that will help out a square meal. Me and Mark Galpin have been down to the lake pulling out bass. I couldn't get him to leave while they were biting so fierce, and I've got to go back and get him."

"Well, can't you spend the afternoon with us?" I asked.

"Well, yes, I think I can," said Bub. I then addressed our little party, saying: "Of course, you all know Bub. He don't go about posing for an angel as a regular thing, but he is ours, sure enough to-day," says Manager Park; "but how in thunder did you happen to come to-day?" Bub, pointing his thumb at me, said: "Oh, I had to come, he engaged me three days ago." He now took from his wagon a basket of bass. Beauties, indeed! We admired them much. He set about dressing them, and in a short time had them in his big frying-pan with some slices of pork, just to give them a tinge. The fire was kindled under saucepan for potatoes, frying-pan for fish, and boiler for coffee (seems though I could smell that coffee yet). Everything was moving fine, and Bub was in high spirits as *chef*.

The young ladies, weary with angling, were resting in the hammocks watching Bub and his fragrant bass, others gathering flowers for the return home. Some screams of delight announced the discovery of the orange grove, which was a charming surprise, and the fruit was plucked and put upon the table as an item of dessert. In the absence of special patters the fish were taken direct from pan to plates; the roast potatoes were passed to each upon a fork. There were sandwiches, biscuits, pickles, and coffee. When all were seated at table I brought out "Voigtländer" to give him a look at our party. There were two rows of happy faces down the length of the table.

Just outside of each row I stood on one side my "drummer boy." On the other "the angel of the day," genial, robust Bub Frary. The reader may take my word for it that it was a very square and enjoyable meal. If any survivor of that event who scans these lines and thinks he or she recalls a more enjoyable outing, please advise by postal.

The good old days of the wet plate appear to have stopped somewhere short of perfection. We have, pasted in a scrap-book a newspaper advertisement of 1861, which reads: "WANTED—A young man that understands the Photographing Business; one who understands the Hairdressing Business preferred. Apply——"

There are many photographic assistants who are chronically out of a berth. There are many employers who when they want an assistant cannot get the man they want. An assistant who is willing—and always ready to work at his best—is the first to fall into a place and the last to fall out of it.

PHILADELPHIA'S SHARE IN AMERICAN PHOTOGRAPHY.

A VERY interesting contribution to the history of photography in America appeared in a recent issue of the *Public Ledger*, Philadelphia. We republish extracts from this account because this MAGAZINE was born in Philadelphia in 1864, and its editor "mixed up" with the early growth of photography in the Quaker City. Prior to the beginning of the MAGAZINE its editor was associated with Mr. Gutekunst, and often heard the veteran portraitist refer to the details given in the record as published by the *Public Ledger*. The *Ledger's* account is supplemented by the reproduction of the first daguerreotype taken by Cornelius, in 1840, a portrait of Mr. F. Gutekunst as he appears to-day, a portait of Robert C. Cornelius, the first daguerreotypist of Philadelphia, and an ambrotype of two gentlemen taken by Mr. Gutekunst in 1854 (with the lens spoken of in the first part of the *Ledger's* account), in the druggist's store of Mr. Avery Tobey.

As the men and landmarks mentioned in this historical note are fast disappearing from among us, we are sure that our readers will agree with us that the matter is worthy of preservation in our pages.—[EDITOR W. P. M.]

"In these days when there is an amateur photographer in nearly every household, it is interesting to note that all of the earlier professional photographers were amateurs at the outset. This is true of the Nestor of the profession, Frederick Gutekunst, the veteran, who has maintained a famous gallery on Arch street, above Seventh, for nearly fifty years. The story of his career is that of the development of the photographic art in Philadelphia, which has contributed as much as any one city in the world to the inventions and discoveries that have made the business of taking pictures the plaything of the public.

"DAGUERRE'S DISCOVERY. The discovery of the method of making sun pictures or drawing by light was not the result of the work of one experimenter alone, but like almost all scientific discoveries, represented the labors of many men, though the final process received the name of the man who crystallized what had before been nebulous The camera obscura, invented by Jean Baptiste Porta, showed how the image of an object could be projected upon a screen. Professor Charles, Sir Humphry Davy, Wedgewood, and James Watt contributed information on the subject, and Talbot was on the eve of success when Daguerre, who had been at work with Niepce, discovered a means of fixing the image, and received all the credit of the invention.

"But the art was not fully established until Scott Archer made public the collodion process upon glass, which itself has been displaced by gelatine Photography as we understand it to-day is little more than half a century old. An attempt was made to patent the fundamental principle of photography, but it failed; one of the important bits of evidence proved that the process had been used and was common property before the application for the patent had been made, being a photograph which showed the front of the Chestnut Street Theatre bearing a dated playbill. It was a good custom of those days to date all playbills and placards in full, and in this, as in other cases, the playbill helped to fix the time of the occurrence.

"It is related that Daguerre accidentally discovered the means of developing daguerreotypes with vapor of mercury. Before he made the discovery a very long exposure was required. . . . The announcement of his process had no sooner been made than hundreds of amateurs in all parts of the world began experimenting along the same line, and in a very short time the process was greatly improved, and other means of making sun pictures were found. Professors Morse and Draper, in New York, and Dr. Paul Beck Goddard, in Philadelphia, were among the successful experimenters who improved the processes.

"FREDERICK GUTEKUNST. Frederick Gutekunst was the son of a German cabinetmaker, who upon coming to this country settled in Germantown, where Frederick was born in 1831. The boy, after receiving a common school education, began his experiments while in the employ of Avery Tobey, a druggist, at 1215 Market street. Here, while attending strictly to his business, he gave some attention to chemistry and electricity—the latter a science which had not then advanced much beyond electroplating, electrotyping and telegraphy. Daguerreotypes, although they had been made for several years, were still regarded as great curiosities. Young Gutekunst conceived the idea of making copper electrotypes from daguerreotypes, and succeeded in doing so, though the process did not become of commercial value, because of the advancement of the art in other directions. Nevertheless, the product of this experiment—a portrait of Mr. Gutekunst himself—is an interesting example of the beginning of reproduction processes. Mr. Gutekunst made three of these copper plates from one daguerreotype, and has one of them framed, hanging in his studio.

"Mr. Gutekunst's experiments in electrotyping led in a very strange way to the adoption of his profession. Dr. Isaac Norris, afterward Secretary of the Franklin Institute, then a young man, had been experimenting with daguerreotypy, and had heard of young Gutekunst. He sought the latter's home and proposed to exchange his camera for the latter's electrical battery. Gutekunst willingly made the bargain, for he had been a frequent (volunteer) sitter at Root's gallery, and was greatly interested in the relatively new process of picture making. What Mr. Norris did with the electrical apparatus is not recorded, but Mr. Gutekunst experimented under great disadvantages, mainly because of want of light, with the camera. He succeeded in getting images of some sort, which only whetted his appetite for something better. He wanted a better lens, and when he had saved $5 he started from his drug store to the *Public Ledger* office to advertise his needs. On the way down Market street he came to the ambrotype gallery of a man known as the "Buckeye Blacksmith," and, seeing the proprietor at the door, asked him about the process of coating a plate for ambrotypes, at the same time explaining his errand in advertising for a lens. The "Buckeye Blacksmith," who cannot be more definitely identified in this veracious history, replied that he had a lens to sell, and thus deprived the *Ledger* of an advertisement, for the price he asked for it was $5, and this was the exact amount which young Gutekunst had saved for its purchase. The bargain was quickly made, and with his new lens Mr. Gutekunst began his amateur career as a taker of pictures. His only leisure time was during the noon hour, but as an enthusiastic amateur he was always ready to sacrifice his dinner for the opportunity of taking a picture.

"HIS FIRST GALLERY. The hardware store had been kept open late; when it was closed the proprietor and young Gutekunst started together to their respective homes at Fourth and Branch streets. Passing through Arch street with a companion Mr. Gutekunst noticed that 706 Arch street (then No. 164) was for rent. He remarked that it would be a good place for a gallery, and on his arrival at home mentioned the house to his brother. The latter at once said that the place should be rented on Monday morning, but Frederick went to his work as usual. In the course of the day he was informed that his brother had taken the Arch street house, and he was, therefore, obliged to give notice to his employer that he intended to leave, which he did with regret.

"The gallery was quickly fitted up with the necessary skylight, and Mr. Gutekunst began in 1856 his long career as a professional photographer with his $5 lens. His camera-box had been made by himself with the aid of his father, for amateur work. Success attended the undertaking from the beginning, and gradually the outfit was improved.

"From the beginning to the present day Mr. Gutekunst has taken a great pride in his profession, and has personally supervised all the work of his studio, from the taking of the negatives to the printing, mounting and other finishing processes. He has, of course, been obliged to employ assistants in all branches of the work, but has always retained direction, and to-day, as for more than forty years, is always to be found at work in his galleries during business hours. Because of his love for his profession, he has been ambitious to make photographs of men eminent in their several professions, and his collection of negatives of distinguished characters is probably equalled in few galleries in the United States. He has, likewise, been extremely conscientious in the delivery of prints. They may be satisfactory to the sitter, but if they are not regarded as satisfactory by Mr. Gutekunst, he will not permit them to go out, but insists upon a new sitting. The product of the gallery is thus kept at a high standard.

"The business grew apace with the growing demand for pictures. It grew amazingly with the opening of the Civil War, for then every soldier had to have his photograph taken, and so did all his relatives and his close friends. Photographers flourished as never before or

since, and for years after the war some galleries lived upon the business brought them by the mere possession of old-time negatives.

"Growth of the business led Mr. Gutekunst to add the upper floors of No. 704 Arch street to his gallery at 706, and thirty years ago he moved to the commodious building, 712 Arch street, since occupied by his galleries. His brother urged him to buy a property at Twelfth and Chestnut streets for $80,000, but he preferred his old neighborhood. The Chestnut street property has so advanced in value that it is now worth $500,000.

"A Growth of Interest. A few years after Mr. Gutekunst had established himself as a professional photographer the Photographic Society of Philadelphia was formed, composed of both professional and amateur photographers, of which Mr. Gutekunst was an original member. The fortieth anniversary of the society was celebrated at the stated meeting, November 12, 1902, at which interesting reminiscences of the early days were given by John C. Browne and Mr. Samuel Sartain, and the latter exhibited a complete outfit for taking of daguerreotypes. This, he said, was one of the three earliest outfits used in Philadelphia. It was made for Dr. Paul Beck Goddard, an assistant to Dr. Robert Hare, Professor of Chemistry in the University of Pennsylvania, the maker being Joachim Bishop, a mathematical instrument maker. Dr. Goddard lived on the east side of Ninth street, above Chestnut, and one of his earliest pictures was of the University buildings opposite his home. Dr. Goddard probably learned at once of Daguerre's announcement in the summer of 1839 of his important discovery, for it is certain that in the fall of 1839 three Philadelphians were experimenting with the process. They were Dr. Goddard, Joseph Saxton, and Robert Cornelius. The latter was a sheet metal worker, and was probably led into the business by the demands made upon him for silvered copper plates, on which daguerreotypes were taken. He perfected the process of making and polishing them. These three men owned the three cameras, etc., heretofore mentioned, and all were diligently experimenting therewith in November, 1839.

"An Early Daguerreotype. Dr. Goddard discovered that bromine greatly accelerated the action upon the plate, and this discovery was almost as important as that made by Daguerre, for the original process was not commercially practicable. An exposure of ten minutes in strong sunlight was required for the plates made with iodine alone, which rendered portraiture almost impossible. Dr. Goddard imparted his secret to Robert Cornelius, who soon afterward, early in 1840, began the business of taking portraits at the northeast corner of Eighth street and Lodge alley (now Ludlow street), just above Chestnut street. The use of bromine was kept secret for two years; soon after it had leaked out and when rivals had appeared in the field Mr. Cornelius gave up the business and subsequently became a member of the firm of Cornelius & Baker, manufacturers of gas fixtures. Mr. Cornelius, some years afterward, presented to Frederick Gutekunst a daguerreotype which he said was the first taken in Philadelphia.

"Dr. Goddard's increasing practice led him to abandon his experiments, and he sold his picture-making apparatus to John Sartain, the famous engraver, whose son, Samuel Sartain, exhibited it at the Photographic Society. Mr. Gutekunst also has complete apparatus for making daguerreotypes, and has felt disposed of late to revive the beautiful art. Mr. Sartain says that the instructions accompanying the apparatus did not include the use of bromine, which was still a secret in the hands of Mr. Cornelius.

"Some Early Operators. The number of daguerreotypers in those early days was never large, because considerable skill was required to produce good pictures and their high cost limited the demand for them. The introduction of the ambrotype increased the number of galleries, for pictures could be more easily taken, and they were brought within the reach of the multitude as to price. Photography still further popularized picture-making, and in the 50s there were many galleries in the city. Among the earlier operators were F. de Berg Richards, the artist, who died recently; John Moran, brother of the famous painters, James, Edward and Peter Moran, and Messrs McClees, Germon, Collins, Wenderoth, Newell, Keeley and Bell.

"Van Loan & Mayall followed Cornelius as professional daguerreotypists. Their gallery was at Fifth and Chestnut streets on a part of the site now occupied by the Drexel Building. Marcus A. Root, who had been a teacher of penmanship and bookkeeping, succeeded Van Loan & Mayall and acquired great reputation for successful portraiture. He had the assistance for several years of Washington Peale, a descendant of the family of artists, whose brother, Howard Peale, subsequently became an operator in Gutekunst's gallery. Mr. Root subsequently went to New York, taking Washington Peale with him.

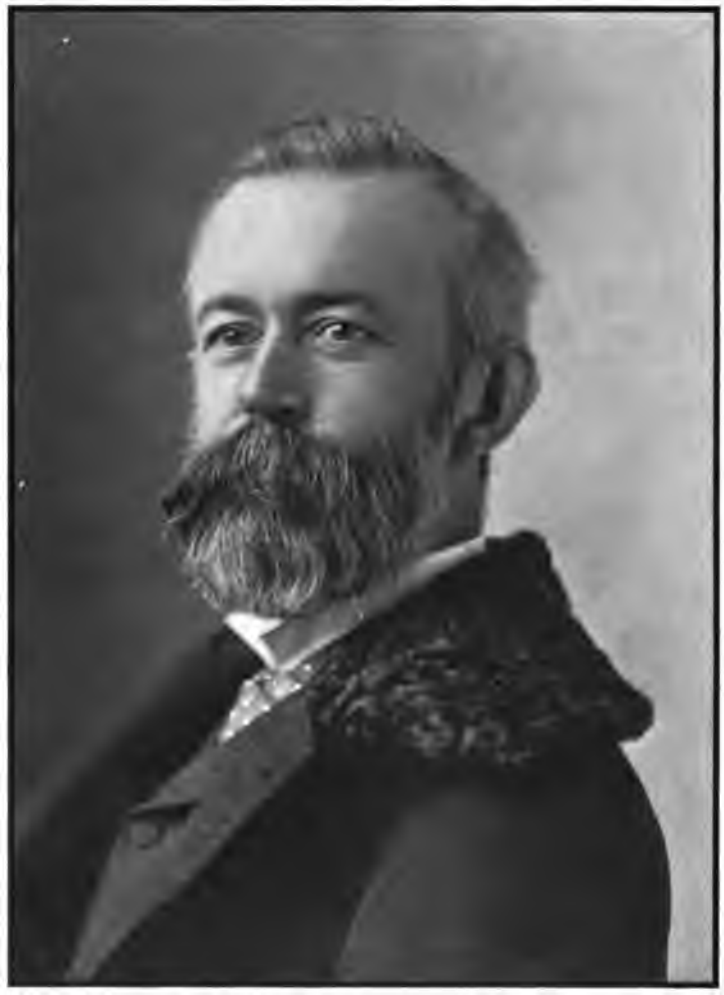
"Ambrotypes. Inventions followed quickly as soon as the principle had been discovered, and it was not long before ambrotypes supplanted daguerreotypes altogether. Occasionally a good ambrotype is seen, but, as a general rule, they are not equal to the daguerreotypes of the same period. In the best practice the ambrotype was made on a piece of plate glass coated with collodion, sensitized with iodine and bromine. This was dipped into a bath of nitrate of silver, and while wet was exposed in the camera. The picture was developed with an iron solution and fixed with hypo or cyanide, the latter being generally used. Having been dried, the glass plate bearing the picture was sealed with Canada balsam to another plate, through which it could be viewed, and its back coated with asphaltum varnish as a backing. Ambrotypes thus made are very durable, some being as good as ever after the lapse of fifty years. The process was further simplified in the ferrotype or 'tintype,' which was made in a similar way on a piece of black enamelled iron. It required no backing, and was varnished to protect the film just as we see it to-day.

"All of these processes labored under the one disadvantage, that they provided no means of reproduction; a sitting was required for each picture, except that, sometimes, a battery of lenses was used in which case as many pictures would be made as there were lenses exposed upon the sitter. Dry plate photography displaced them all because of its many advantages, chief among these advantages being that there is no limit to the number of pictures which can be made from one negative.

"For a great many years the wet process was used exclusively in photograph galleries, and it is still employed for making reproductions in photo-engraving establishments. The introduction of gelatine plates, which displaced collodion, was gradual.

"Amateurs in the early days were, generally, either chemists or artists, and thus brought to the work some special aptitude or fitness. They had to make their own apparatus at first, prepare their own plates and mix their own chemicals. Some of them made their lenses as well as their camera boxes, and not a few prepared the chemicals they were to use, for there were no supply houses except the drug stores. Down to the present day there are amateur photographers who perform all the work involved in the taking of a picture themselves, even to coating the paper upon which prints are made, and all who are worthy of the name develop the negatives and print their own pictures, preferably using developing and toning solutions prepared by themselves.

"About Amateurs. There are many amateurs, however, who buy ready-made developers, fixing baths, toning solutions, etc., and know nothing of the art except that they are able to follow printed directions. There is a still larger army who can do nothing but 'press the button' and then engage professional photographers to do the rest. In the organization of the Photographic Society of Philadelphia, in 1862, professional and amateur photographers joined together on equal terms to found the organization. The society has maintained a high standard of membership, and its amateur members continue to vie with their professional brethren in skill and knowledge. The Photographic Society was started by Constant Guillou, who became its first President. Among the early members who contributed to the advance of the profession, as well as to the prosperity of the society, were Coleman Sellers, one time President and now the only honorary member; M. Carey Lea, whose chemical researches proved to be of great value: William Bell, John C. Browne, Dr. Ellerslie Wallace, Frederick Graff, Edward L. Wilson and others."



EDWARD L. WILSON, Ph.D.

Born March 4, 1838: Died June 28, 1908

Portrait by Sarony, New York

WILSON'S PHOTOGRAPHIC MAGAZINE.

FOUNDED BY EDWARD L. WILSON.
L. W. WILSON, EDITOR.

VOL. XL. JULY, 1903. No. 559.

In Memoriam.
Edward L. Wilson.

WITH profound sorrow I announce to you the death of Edward L. Wilson, which took place at Vineland, New Jersey, on June 23d, in the sixty-fifth year of his age. Those who knew Mr. Wilson in his prime will recall him as a man of remarkable vitality and endurance. These, with his other gifts, he spent all too generously in his lifelong work for others—forgetful of himself. Latterly the inevitable reaction which follows persistent overwork asserted itself and his splendid energy began to fail. "I tire so soon" was his pathetically courteous apology, as he slowly but surely yielded to his malady. The last few years made him familiar with pain, weaving new flowers in the fair garland of his life; but he maintained his keen interest and directed his affairs until within a week or two of his death. At the end, bravely and gently as became the man, his soul passed out from this world like the soft sighing of the summer wind.

For more than a quarter of a century, and in our own times, Edward L. Wilson was one of the most notable figures in American photography; its foremost teacher and publicist, the organizer of its scattered forces, the sturdy champion of its rights and privileges wherever these were questioned. Carey Lea, Vogel, Wharton Simpson, Phipson, Robinson, Rocher, Root, Rulofson, Landy, Sarony, Salomon, Monckhoven, Lacan, the elder Nadar, Luckhardt, Fitzgibbon, Adams, Newton, Wilcox, E. and H. T. Anthony—to name only a few of the honored dead—were his familiars and coworkers. That he accomplished, in his day, more than any other one man for the uplifting and advancement of photography in America is indisputable. For almost forty years he gave himself, in these pages and elsewhere, for the helping of all who follow photography as their calling or profession. It is right and just, therefore, that we should make here some record of his work among us, marking, as we turn the pages, the quality of the man and the unselfishness of his life.

Mr. Wilson began his work in photography in the early sixties, entering the service of F. Gutekunst, of Philadelphia. In that association he was brought into contact with the photographers of those days, saw their lack of direction, and quickly realized his vocation. Photography, as a profession, was then at its lowest ebb and the whole art in a state of transition. The daguerreotype process had been shelved as out of date, and new methods were being introduced. Confusion and disorganization were uppermost. The photographic fraternity was harassed on every side by numberless restrictions and abuses, infested by a class of men who, taking advantage of the little practical information available concerning the new processes, travelled the country over selling so-called "secret processes" and "rights to use" certain formulæ. Photographers were also struggling under the burden of a stamp tax upon every photo-

graph made, adopted as a means of revenue during the Civil War. The copyright law of that day gave the photographer no redress when his productions were pirated by those who desired them for commercial purposes. The carbon patent and the photolithographic patents were also among the troubles of those years. These abuses Mr. Wilson from the beginning set himself to remedy. There was urgent need for a leader, a strong hand to stem the tide of demoralization, to organize the fraternity and inform it as to its rights; a clear head to open the way toward better conditions, and an organ which should shape events toward relieving the profession from its burdens within and without.

EDWARD L. WILSON (1876).

Such was the condition of affairs photographic when Edward L. Wilson began the publication of the *Philadelphia Photographer* in 1864. In this venture he was well supported by prominent amateurs and professional workers and many men of note, such as Mr. Coleman Sellers, Rev. H. G. Morton, Mr. Shelton McKenzie, and M. Carey Lea, lent their practical aid. His first service was to secure a modification of the copyright law of 1831 so as to include photographs. In 1865 he organized and led the opposition of the fraternity to the so-called bromide patents and solar camera patent. This fight extended over several years and eventually resulted in the upsetting of the bromide patents, by which decision photographers were freed from a grievous imposition. The stamp tax was modified in 1866 and completely removed in 1868. In this year Mr. Wilson was foremost among those who organized the National Photographic Association, of which the present Photographers' Association of America is the successor. Of the N. P. A. Mr. Wilson was the permanent Secretary for many years, devoting to its service considerable personal labor and resources. The first exhibition and convention of the Association was held at Boston in June, 1869. Early in that year the photographers united under Mr. Wilson's leadership to oppose the issuing of a patent controlling all methods of saving photographic wastes. The validity of this patent was challenged, and during the progress of the legal battle which ensued, covering some years, Mr. Wilson was arrested

EDWARD L. WILSON (1886).

in New York. Eventually the patent was overthrown in the courts, and Mr. Wilson received at the Cleveland, Ohio, Convention of 1870 the congratulations of the fraternity upon his victory in their behalf.

During these strenuous years Mr. Wilson turned his tireless energy to the improvement of photographic work, and it is not overstating the case in any way to assert that the high standard of excellence seen in American photography to-day is very largely due to the unceasing instruction and example given by Mr. Wilson in these pages and at the gatherings of the craft.

In 1873 the National Association held at Buffalo, N. Y., what was probably the most successful photographic convention ever held in this country. As the Secretary of that meeting Mr. Wilson published a special number of the *Philadelphia Photographer*, comprising some 224 pages, reporting the proceedings of the Convention in detail. The report was published within two weeks after the close of the Convention, a remarkable journalistic feat at that time, but typical of the man who carried it through.

Immediately following this Convention Mr. Wilson was appointed by the city of Philadelphia as a delegate to visit the Vienna Exposition of 1873, to awaken interest in Europe for the coming Centennial Exposition of 1876, held at Philadelphia. On his return from Vienna he roused the fraternity and organized a movement to secure a separate and special building devoted to photography at the Centennial Exposition. By his personal effort half of the sum necessary was contributed by the Exposition authorities, the other half being gathered by subscription among the fraternity. This resulted in the most wonderful exhibit of photography and its applications thus far seen in America. The photographic concession of the Exhibition was placed in the hands of Mr. Wilson and the late W. Irving Adams, the firm being known as the Centennial Photographic Company. This concern employed hundreds of workers and secured a complete photographic record of the Exposition from its inception to its close. I believe that the British Government is the sole possessor of the complete collection of photographs comprising this notable record of our first World's Fair, although many of the negatives are deposited with the Commercial Museum at Philadelphia. A few years later Mr. Wilson had charge of the photographic department of the Cotton Exposition held at New Orleans.

In 1880 Mr. Wilson issued a special supplement to the *Philadelphia Photographer*, urging the organization of the Photographers' Association of America to replace the old N. P. A., which had succumbed to internal dissensions and bankruptcy. At the first meeting of the new Association attention was called to the promise of the dry plate then being introduced in this country. The presidency of the new Association was offered to Mr. Wilson, but he declined, stating his resolution to devote the remainder of his life to his work in journalism.

About this time the pressure of years of unceasing effort began to tell upon him. Perceiving the possibilities opened up by the advent of the gelatine dry-plate, he visited the Orient in 1882 in charge of the largest photographic expedition ever attempted in those countries, travelling and photographing through Egypt, Arabia, and the Palestine, accompanied by Mr. W. H. Rau, of Philadelphia. His exploration of the rock city of Petra in Arabia was recognized by *savans* as a distinct achievement. In recognition of the value of his work in the East, as supplying lost links in Biblical history, the Washington and Jefferson College of Pennsylvania honored him with the degree of Doctor of Philosophy. Returning to America he utilized the vast store of pictorial material thus secured in the lecture field and in the preparation of articles for *The Century*, *Scribner's*, and other magazines. The results of his travels were finally embodied in a magnificently illustrated work entitled "In Scripture Lands," wherein the best of his great collection of photographs were reproduced by the leading wood engravers of the modern American school.

In the year 1885 the name of the *Philadelphia Photographer* was changed to WILSON'S PHOTOGRAPHIC MAGAZINE, and the office of publication removed to New York. During the years 1881 to 1893 Mr. Wilson wrote and published his well-known text-books on photography, which

have enjoyed an unusually wide circulation. Of these, *Photographics*, published in 1881, was the first; *Quarter Century in Photography* followed in 1886, and *Cyclopædic Photography* in 1893. The latter deserves special mention as probably the most comprehensive work on photography in the English language. It was first outlined by the late H. H. Snelling, whose work was revised by Dr. H. W. Vogel, the whole being considerably enlarged and brought to date by Mr. Wilson.

The story of Mr. Wilson's activities during his long service as a journalist being, in fact, the history of American photography from 1864 to the present time, it is impracticable here to present a consecutive record of the many works to which he gave his labor and enthusiasm. It will be interesting, however, to glance at a few of his activities apart from his magazine. First, in 1866 he began the publication of a year-book of practical photography under the title *Photographic Mosaics*. In this enterprise he had for some years the editorial co-operation of the late M. Carey Lea. Year by year, from 1866 to 1901, when his last illness came upon him, the pages of *Photographic Mosaics* were filled with concise digests of the progress of photography in all its applications. Recalling the earlier pages of *Mosaics*, I remember Mr. Wilson's earnest contention that one day photography would illustrate our books, periodicals, and daily papers. The idea then seemed visionary, but time has justified the prediction, and out of the vast stores of information concerning process work embodied in the *Philadelphia Photographer* have come our present methods of illustration. Thus, the first half-tone engravings by Frederic E. Ives, and the early work of Moss, the first examples of Heliotype, Albertype, Woodburytype, and of photography in three colors, published in America, appeared in the pages of his magazine, which from the first number was invariably illustrated with an actual photograph by this or that process, as the various processes were developed. Similar special enterprises were the publication of an illustrated monthly journal known as *The Photographic World*, of which two volumes were published in the early seventies, and a third monthly journal *The Magic Lantern* (1874–1885) the latter being, I believe, the first periodical devoted to this branch of photography. His collection of lantern slides and stereoscopic views of American and European countries was at that time probably the most comprehensive collection ever brought together in America. As part of his work in the lantern field Mr. Wilson published three volumes of a valuable work for lecturers, known as "Wilson's Lantern Journeys," comprising a series of descriptive notes of people and places adapted for the preparation of illustrated lectures.

To his editorial work throughout he added the responsibilities of publishing, and at least a score of well-known books on photography by Vogel, Trask, Hearn, Gihon, Bigelow, Wilkinson, Hepworth and others attest to his discrimination and enterprise in this field. He was also largely instrumental in popularizing stereoscopic photography in America, the well-known stereoscope invented by the late Oliver Wendell Holmes being first published in these pages. During the seventies Mr. Wilson edited and published the first volumes of *Photographic Times*, which was then sent out as a special supplement under the covers of the *Philadelphia Photographer*. Thus, during those years he was the responsible editor of no less than four photographic journals.

It is impossible to glance, even casually, over the record of his life without wondering how one man could accomplish so much. This astonishment increases as we reflect that the published record comprises only part of his life-work, much of his time being necessarily given to the work of organization and the legal battles in which he was from time to time involved in behalf of the freedom of photography. He had an enormous capacity for work, and his various publications will remain as a monument to his indefatigable ability and breadth of mind. A man of high ideals and sterling integrity, he had a lovable personality and possessed in an unusual degree the faculty of attracting the enthusiastic support of those with and for whom he worked during his long life. In this brief record I have but barely touched the more prominent among his innumerable

labors for American photography. To tell of them all, and to explain, even briefly, the significance of his labors, would be to rehearse the history of American photography during the last half-century. He leaves a gap which will be difficult, indeed, to fill, and his death will be mourned as a personal loss by all who touched his life and work. *Requiescat in pace.*

JOHN A. TENNANT.

EDWARD L. WILSON.
From a portrait, 1897, by Sarony, New York.

TRIBUTES FROM HIS CONTEMPORARIES.

THE announcement of Mr. Wilson's death brought many letters and sad tributes of affection from friends and co-workers in photography. From among these I gladly select a few, rounding out my poor sketch with views of his personality and work as seen by others, some of whom stood shoulder to shoulder with him in earlier days:

Another dear friend gone! Edward L. Wilson leaves behind him the respect and love of many who knew him simply as a man, but he leaves also behind him the effects of a life-work which in their importance are difficult to measure. I believe that there is not a single force that had a greater beneficial influence on his special art in America than his labors, so well known by every practical photographer. It was my good fortune to know the man and his work when he started with youthful enthusiasm to enter the ranks of the investigators, experimenters, explorers, and, at last, that of the teachers; to give the best he had gathered of knowledge to an ever-growing, appreciative audience, and I had reason to admire his talents, his energy, and the endurance with which he followed out his plans to make himself useful to the members of the photographic fraternity. Not being a practical photographer myself, I put the question to one who taught himself the practical art to a considerable extent from what the pages of WILSON'S MAGAZINE brought to him: "What is your estimate of Wilson's work as exemplified by his magazine?" And here is his answer:

"Mr. Wilson had the faculty of clear statement and of writing to the point, enabling a practical man to easily grasp his meaning. A photographer would get more out of a few pages from his hand than from many a book that has come to my notice written by a theorist.

"WILSON'S MAGAZINE could be relied on for good practical suggestion, for good selections by contributors, for good taste in subjects and illustrations, and for artistic guidance. I hope that his directing hand and spirit will find a worthy successor in upholding the high standard of the publication that bears his name. His memory will be kept green by every photographer of the present generation."

Wilson's last friendly letter, dated from Ocean City, February 5th, reached me in Mexico. It was the longest, happiest, most hopeful letter I had from him for many years. He rejoiced in being freed from the nervousness which troubled him for the last few years. It was a letter so cheerful, so rose-colored, that I anticipated an old-time joyous meeting coming East.

The sad news of his sudden demise took me, therefore, by most painful surprise. As one of the pioneers for art movement in this country in his specialty I always looked upon him as a comrade and brother in the field of action, and his loss means to me very much indeed.

LOUIS PRANG, New York.

Edward L. Wilson was a prominent figure among the photographers of Philadelphia for many years, becoming a member of the Photographic Society of Philadelphia soon after its birth in 1862, and after a time its Secretary. He devoted himself to the advancement of that art with untiring energy. At every meeting he introduced something of interest. In fact, for some years, he was the life of that society. In all the advances in photography he showed the greatest interest, and his ready pen added much to make the *Philadelphia Photographer* a journal of importance. The writer of this paper was associated with Mr. Wilson in many experiments and upon several expeditions in which photography was the object. One of the most important was a visit to Iowa to observe the total eclipse of the sun. Associated with Mr. Notman and others, the work of photographing the Centennial Exhibition at Philadelphia in 1876 was most successfully carried out, not only as a business venture for himself and associates, but giving great satisfaction to the Centennial Board of Management.

The work that Mr. Wilson, assisted by Mr. William H. Rau, accomplished during a journey to Egypt, Palestine, and Arabia (Petra), was most remarkable, giving a

series of pictures of those places that have never been surpassed.

As an officer of the National Photographic Association he gave his time and attention to further its success and added greatly to its usefulness.

Looking back over the last forty years, Edward L. Wilson is always found taking a leading part in everything that pertained to photography, and always ready to extend a helping hand when it was required.

JOHN C. BROWNE, Philadelphia.

My loss in the death of Mr. Wilson is great, and the loss to the art of photography equally so. As I review the past, the many kind acts, words of comfort and encouragement that he has given, not only to me, but to many others, have impressed me with the fact that it is incumbent upon me to pay this tribute to his sterling character and his ever-constant love toward our art.

During the time when WILSON'S MAGAZINE was located in Philadelphia, and known as the *Philadelphia Photographer*, there were many occasions when his influence and power were a source of tremendous strength to the photographic world, always exercised for good to the craft, and on several occasions at the cost of great personal financial sacrifice. His magazine, being for years practically the only publication of the kind in this country, exerted great interest (for it was to be found everywhere), and his work in our behalf won the affection of the whole body of photographers, which has continued to this day.

Many of them, like Dr. Wilson, have now passed away, but not too soon to tell the younger generation of photographers of these facts, who have also in turn become cognizant of the good he has done, for there have been many times during his illness that he was able to drop an occasional word or line to help along, besides the attention that he has tried, even when most afflicted, to give to his magazine.

Dr. Wilson's life can be a lesson for good to us all, and when the time comes that our life's work is finished, may it in turn be said of us, that he was ever ready to help along by kind words and deeds, ever ready to give good counsel, and that he did his share toward elevating the art which we all love, so that we will have done some good in the world by our living in it, as was so truly the case with Edward L. Wilson. CHAS. W. HEARN, Boston.

The news of Dr. Wilson's death came to me with all the force of sorrow as the loss of a dear friend. For a number of years I had the pleasure of contributing to his publications, and have been the recipient of valued favors at his hands. Please convey to his family my most sincere sympathy. By the death of Dr. Wilson the practical photographers of the world suffer an irreparable loss. F. M. SPENCER, Troy, Pa.

No man who has lived since the days of Daguerre has done so much for the art and science of photography as our dear friend Dr. Wilson, who has just been taken from us. He has instructed, guided, and encouraged us all. None so high or so humble as to be beyond the influence of this earnest, kindly, self-sacrificing nature. He was an unfailing fountain of inspiration. If monuments of departed worth are in the good deeds and examples of men's lives, surely his will reach to the skies. When was there ever so much force in such a genial, tender, frail body? God bless his memory, and God bless him for the helpfulness of his busy life.

GEO. G. ROCKWOOD, New York.

I am deeply pained to hear of Mr. Wilson's death. My acquaintance with him for over thirty years tells me that his passing from among us is a great loss to photography, and it will be long before his place can be filled.

GEORGE MURPHY, New York.

The death of Edward L. Wilson leaves me with a sense of real personal loss. For years I knew and corresponded with him, and never found him other than the sincere, courteous gentleman, the willing, helpful friend. A man whose whole heart was in his work, one who was ever striving after all that was best in his art, he leaves the world of photography indebted to him in no small measure. His loss will be mourned and his memory honored by the many who were proud to call him friend.

VERNON ROYLE, Paterson, N. J.

The death of Dr. Edward L. Wilson brings deep regret and sadness to my heart, and I am sure these feelings will be shared by the photographic trade at large, especially by the older members of the fraternity, who, during a third of a century, have been aided by his wise counsels, and had long since learned to love and honor him for his unselfish devotion to their welfare. He was a man of unswerving integrity, of the highest ideals; conservative, yet progressive; of conspicuous ability, and a champion of all that was noblest in the moral and business world. The influence of such a life does not die with the body, but continues a potent power for good for many years after the active life has ceased.

JAMES H. SMITH, Chicago.

I am shocked to learn of the death of Edward L. Wilson. Photography has lost a valuable friend. I give my sympathy to his immediate friends and to his followers at large throughout the country, who recognize the high standard he gave to American photographic journalism.

JAMES F. RYDER, Cleveland, O.

The time has come, and how deeply we regret it, when we must mourn the death of Edward L. Wilson, the man who, for half a century, has been the great champion of the wonderful art of photography. How widely and deeply his loss will be felt! He who has so ably and industriously wrought for the benefit of the thousands of votaries of the art. Keenly investigating, always sifting the best, and disseminating his knowledge, we can scarcely realize what he has accomplished. Who now will so ably champion the excellent, lead the novice, and encourage the unfortunate?

XANTHUS SMITH, Philadelphia.

As a boy, I remember seeing Mr. Wilson always industriously at work on his journal, whose office at that time was at 820 Arch Street. From that time on I have always known him to be genial and pleasant, and willing to help anyone in whom he saw a future. He was the head of the Centennial Photographic Company, and really supplied the brains of the management and most of the detail work. I have seen him many mornings as he went through the several buildings, between 7 and 8 o'clock, with his note-book making notes of such things as should be photographed. He was a born organizer and financier, and personally I believe he made a mistake when he turned away from business to be a publisher and writer. He seemed to know how to select his men and get the most out of them. I remained with the Centennial Photographic Company a year after the Exhibition was over and had many opportunities of learning of his business qualities. He left me in charge of his business during the Louisiana Cotton Exposition, where he was given the concession for the photographic work, 1885, and I always found him ready and generous to pay for services when satisfactory.

I, however, learned to know him best when I travelled with him for an Oriental tour in 1881, when we travelled together for six months, occupying the same state rooms, hotels, and tents during that memorable trip. That expedition showed the enterprise of the man, as at that time there were very few dry-plate operators in this country, his original thought being to take either a German or a French operator with him into those countries in the far East. As I had spent the best part of a year with Jackson, of Denver, Col., where dry plates only were used, he arranged to take me as his operator. Since starting my own business I have not had many occasions to meet my old friend, but remember with much pleasure this trip to the Orient, which has made such a lasting impression.

WILLIAM H. RAU, Philadelphia.

The announcement of the death of my long-time friend, Edward L. Wilson, has saddened me. My attention was first called to him while a student in Germany by my friend, Paul Liesegang, then the accomplished editor of the *Photo. Archiv*, as he handed me the first numbers of *The Philadelphia Photographer* with complimentary good wishes for the enterprise. Upon entering upon my position in America soon after, I made his acquaintance, and we soon became fast friends.

I realized in our first interviews that the establishment of the MAGAZINE was more than a simple business venture with him.

His ideal, which he seems never to have lost sight of in all the years of his conduct, was a high-toned photographic journal, first-class in every respect. Always alert for what was new from a scientific point, or promising of practical results, but little escaped his editorial notice, and while he championed the rights of the professionals (sometimes at considerable cost to himself), he at all times tried to elevate the craft by encouraging and insisting upon artistic merit as well as technical excellence in the work of everyone. He was proud (and with right) of his magazine, which grew steadily with the growth of photography, in size, in interest, and in character. From the first he had the sympathy and cooperation of some of the best contributors to photographic literature. The magazine is a mirror, in its forty volumes, of the progress of photography.

His work was not confined to the editorial sanctum. He was always ready for the field. Whether on a total eclipse expedition under the Government, or conducting a caravan for photographic purposes in the far East, it was only a broader photographic field in which the whole man was broadened. As a man, he was, under all conditions, genial, companionable, sincere, always ready with time and trouble to accommodate his friends or advance the interests of photography. I have many personal favors to recall cheerfully rendered. There will be many who will call with sadness over him their "*Vale, vale, aique vale.*"

CHARLES F. HIMES, Carlisle, Pa.

It was with profound sorrow that I received the news of Mr. Wilson's death. His was a rare, sunshiny nature, overflowing with kindness and sympathy. To help others, to make their path easier, was his constant aim and delight.

Of photography he may well be called a high priest, sacrificing at its shrine his time, his best thoughts, his unceasing efforts. He loved it, never hesitated to fight its battles, and struck many a telling blow in its defence. He carries with him the love and admiration of all his professional brethren. B. J. FALK, New York.

I regret most sincerely that Mr. Wilson has been called from us. I always had a high regard for him and felt that his influence on photography was a good one, elevating, and inspiring. He did good work toward dignifying the profession and toward raising the artistic standard of American photography. I join in your sorrow and condole with his many friends.

J. C. STRAUSS, St. Louis.

Mr. Wilson's death is a surprise and shock to me, and it is with deep sorrow and regret that I mourn his passing away. His helping hand was often extended toward me, and in my earlier photographic days I looked up to him for much assistance and kindly guidance.

I am glad to know the magazine is to be continued by Mrs. Wilson, and our sympathy and best wishes go out to her for a grand success in its continuance.

GEO. E. TINGLEY, Mystic, Conn.

I was grieved to hear of Mr. Wilson's death, and deeply realize the loss to photography in its best aspirations, as well as the personal loss to those nearest to him.

My mind goes back thirty years or more, when photography was mostly devoid of all art tendencies. How earnestly he strove to arouse us from our rut-bound dopiness. By earnest talks, by publishing the best work of such men as Luckhardt, of Vienna; Wilson, of Scotland; Sarony, Rocher, Landy, and many other shining lights, and by distributing such helps as Burnet's *Essays* and reproductions of the old masters, he worked early and late to turn us toward the light and make us realize that a photograph might also be a picture; that a cultivated eye should see beauty whether caught by the brush and chisel or by the camera.

W. G. C. KIMBALL, Concord, N. H.

I wish I possessed sufficient wealth of language to pay fitting tribute to one who was my inspiration during the earlier years of my photographic career, when to see the pictures in his magazine was an instruction, to read its pages a privilege. To my youthful mind Edward L. Wilson was the magazine and the magazine was Edward L. Wilson.

I feel that I am but voicing the sentiments of thousands in the profession of

twenty-five years ago when I say he stood for all that was highest and best in photography. E. B. CORE, New York.

With deep regret I learn of the death of Mr. Wilson, my friend and adviser to me for many years.

That the profession has lost a bright light goes without saying. His sound teaching materially assisted many. His life's work leaves a lasting impression, and as a pioneer and more than able editor he will always be remembered and revered. Photography indeed has lost a staunch champion and true friend. No one can take his place. It has been my hope for years to personally meet him.

CHARLES P. MARSHALL, Cazenovia, N. Y.

It is with great sorrow that I hear of the death of my old and esteemed friend, Edward L. Wilson. For many years I was in communication with him. His pen and journal were ever ready to encourage and advance new ideas in the early days, when the development of our art required more skill in the manipulation of chemicals than later members of our craft will ever realize. His zeal and knowledge, with the co-operation of professionals, made his photographic journal the most instructive publication of that early period. His life-work was to advance our profession, and his name will ever live in the photographic world.

Please convey my deepest sympathy to Mrs. Wilson for her loss and ours. I am sure the MAGAZINE under her guidance will maintain the high standard that has always characterized it in the past.

I. W. TABER, San Francisco.

We have seen the announcement of the death of Mr. Edward L. Wilson, and take this opportunity to join with his many friends in extending to you our sympathy in your bereavement and to express our appreciation of his worth, for we have known Dr. Wilson for many years and realize that the photographic world had lost an earnest leader in all pertaining to its interests.

We note your purpose to continue the magazine which he has maintained on so high a plane, and wish for you the utmost measure of success therein.

A. M. COLLINS MF'G CO.
(HENRY H. COLLINS, Sec'y and Treas.)

My acquaintance with Mr. Wilson dates back to 1864, about the time he commenced his life-work for the advancement of photography and which he kept up as long as he was able. This, you see, was a good part of his lifetime. How well he has succeeded I am sure is shown by the way his works have been received and his articles copied both in this and in foreign lands. H. A. HYATT, St. Louis.

I regret very much to learn of the death of Mr. Edward L. Wilson. I have read his PHOTOGRAPHIC MAGAZINE for a number of years, and consider it one of the best publications in this line and one that has done much to bring photography to its present high standard. I wish to extend to you my deep sympathy in your loss, and at the same time hope the publication will continue with the same success as before. M. A. SEED, St. Louis.

I am in receipt of the sad intelligence of Mr. Wilson's death after a long illness. I have been intimately acquainted with Mr. Wilson for over thirty years, and have always held him in high esteem in regard to his sterling character and abilities. As the pioneer editor of a photographic journal in this country he assisted materially in the great advancement the art of photography made. In his death the photographic fraternity loses both an able worker and a staunch friend.

G. CRAMER, St. Louis.

I have known Mr. Wilson since American photography was in its infancy. By his PHOTOGRAPHIC MAGAZINE he has done much to elevate and perfect American photography; his knowledge and experience in photography and ability and energy as an editor made his publication one of the best and most popular of photographic magazines.

The photographers throughout this country, with most of whom Mr. Wilson was personally acquainted, will receive the sad news of his death with sorrow and regret.

L. F. HAMMER, St. Louis.

I am very, very sorry to hear of Mr. E. L. Wilson's death. He was an old friend of my father's, as well as myself,

and one of the most familiar faces among our friends in the photographic trade. Every one esteemed him for his character and his congenial friendship, and his services to photography in accurately recording its progress and spreading much needed photographic information at a time when it was difficult to obtain can scarcely be overestimated.

MAURICE GENNERT, New York.

I learn with sincere regret that Dr. Edward L. Wilson has passed away. Photography can ill afford to spare so loyal an advocate of its cause as Dr. Wilson has always been. I did not know him so well as others did, but I have always had the greatest respect for his distinguished attainments as a journalist, traveller and photographic expert, as well as for his genial qualities as a man.

R. A. ANTHONY, President,
The Anthony & Scovill Co., New York.

I was greatly shocked and grieved to see the notice of Mr. Wilson's death in the public press several days ago. I have known Mr. Wilson since my boyhood. He was one of my father's oldest and best friends, and I know that my father always honored and trusted him to the last.

Edward L. Wilson may justly be considered one of the fathers of American photography. He served in the ranks, and then, for many years, as a trusted leader in the cause which we, too, have served as his followers. The present generation of photographers are, many of them, unware of the very conspicuous and important services which he rendered photography and photographers many years ago. But the Old Guard knew, loved, and honored him. They will mourn his loss. So will the many loyal friends he has left behind.

I gladly add my feeble tribute to those you will doubtless receive from many others. I should like to write more at length, as I am conscious of a flood of memories crowding upon me for expression at this time, but I should be encroaching on the space of others, and my words would be mostly personal, after all. I will, therefore, be constrained to lay a simple wreath of affection and respect on his tomb, in the name of his old friend, my father, the late W. Irving Adams, and in my own.

W. I. LINCOLN ADAMS, New York.

It is sad to hear of the passing of our friend, Edward L. Wilson, the pioneer of the highest class of photographic journalism, and one who set the pace for all others that came after. My association with him dates back almost to the launching of the *Philadelphia Photographer*. Not only as a journalist, but as a clear and lucid writer, taking the highest ideals as his standard, will he go down to posterity. No higher standard than his publication reached has been attempted by the profession.

My first intimate acquaintance with him was, I think, in 1879, when I called on him in Philadelphia and pointed out to him the gigantic swindle that was attempted upon a then easily exploited craft by the "Artotype" concern. Having been a contributor to the columns of the journal, and also knowing something of the methods of that concern himself, he asked me to write it up and gave carte blanche as to space, etc. It involved me in a controversy with people who were innocently connected with the concern, who had not learned the true inwardness of the scheme, much to my regret. We succeeded in stopping the scheme almost immediately, and no additional victims were secured. We had only our own consciousness of right and duty as a reward. We have always remained friends, though of late years the "spirit has not moved me" to write, as I thought the younger generation should step in.

I must add the remark made by my son, whom I have brought up in the profession and has had some art education: "WILSON'S MAGAZINE is the only one I care about in an artistic sense in the profession." While this is, perhaps, extreme, he is not far from right. Convey my sincere sympathy to his family.

D. BACHRACH, Baltimore.

I read with sadness the tidings of the death of my old-time friend, Edward L. Wilson; after much suffering he is at rest.

That portion of his life's work pertain-

ing to our art many of us have followed from the very beginning, from the initial number of his magazine. That he labored well and faithfully in his vineyard, the fruits do show; as the various numbers of the familiar monthly, with their pertinent illustrations, abreast of the world's progress in the art, and the concurrent columns of letter-press flash past the retrospective vision, then am I made aware of and amazed at the magnitude of the labor and burden.

Verily the profession owes him much, and in the hurry and bustle of the battle of life let us not be coldly unmindful of it.

C. A. ZIMMERMAN, St. Paul, Minn.

It is with deep regret that we learn of the demise of Mr. Edward L. Wilson; all feel the loss keenly. The photographic profession has lost one of its ablest friends.

CHAS. COOPER & CO., New York.

Forty years' knowledge of Mr. Edward L. Wilson gave me a just appreciation of him. He came into the photographic field during the transition from Daguerreotype to wet-plate work. There were then but few really good workers, and they kept their methods very secretive, only giving instruction on the payment of from $150, $75, and $50, with a few weeks' practice in the dark-room, and then launched out as operators. Mr. Wilson, from the very first, seemed determined to break down dark-room secrecy and make the "know how" public. This raised a strong opposition to him and his journal. I saw an eminent photographer tear up his journal and stamp it under foot, using strong language, in that, should Mr. Wilson succeed, his business would be ruined. It was no easy matter Mr. Wilson had taken in hand, and for years success seemed doubtful.

How stands the matter to-day? Is there now any process secret? Every process now used can be had for a small sum in publications emanating from him, so clearly written that anyone of ordinary intelligence can follow and be successful. Every photographer should be grateful to him. He was always working and writing in their interest, often, by doing so, against his own. Everything he did he stamped with his individuality. Write under any name he would, Wilson could always be discerned. He was a strong man, either as friend or foe. I do not know of any friend he ever forsook or any foe who did not regret his opposition to Mr. Wilson. He rejoiced in your success and sorrowed with you in failure.

Good-bye, old friend! We battled and agreed, opposed and sympathized, the recollection of which must be my only consolation now you are gone; but the impetus you gave to photography will go on for many years.

WILLIAM BELL, Philadelphia.

A photographer since 1848.

We have always looked upon Mr. Wilson as an old friend in photography, having known him for at least twenty years. We have enjoyed reading his many articles in his magazine from time to time, and will always remember with great pleasure his illustrated lectures on Palestine, etc. In his death the photographic world has lost one of the best writers, and the profession at large will miss his clever hand. To his family we extend our heartfelt sympathy.

W. P. BUCHANAN, Philadelphia.

I am very sorry, indeed, to hear of the death of my friend, Edward L. Wilson. I first met Mr. Wilson as Secretary of the old N. P. A. at Philadelphia in 1871, the year of my inchoate commencement in photography. Summing up his journal and *Mosaics* under him as the general expression of his life, Edward L. Wilson was undoubtedly, from 1864, the chief upward-moving force in American photography. His publication of *Pictorial Effect in Photography* and other similar works were especially inspiring and formative in that crude period of photography; consequently no history of American photography would be complete without a large chapter devoted to Mr. Wilson and his passion—the honor and the glory of photography as a science and as an art.

He had the courage of a man who knows his business and strives to accomplish it. He had the wisdom to see that his interests were as one with the photographers, and he thought soundly and acted bravely for the interest of his readers. He possessed

the sympathetic imagination, and the needs of the struggling photographer were real to him, and in this way he was big enough to rise with his opportunities, and so was representative of that which is noble in self-centred humanity—the thing of pith and moment to every man. We must take the manner with the style of the man. May he see the travail of his soul and be satisfied with his work in time and place, for, all in all, his was a fine character.

Please convey my heartfelt sympathies and condolence to those near and dear to him now as in the past, for love still abides. Dust to dust is not said of the soul. W. H. POTTER, Indianapolis.

I knew Mr. Wilson only through his magazine, but have always felt that he exerted much good influence among professional photographers and greatly aided them in their business methods. While he may not have been ready to accept, totally, the most recent phases of pictorial photography, still his thoughts seemed always to urge professionals to improve their work, and this quiet teaching has done much good. Professional photography everywhere is on a higher plane than it was twenty-five years ago, and is going ahead with leaps and bounds, and Mr. Wilson's name must be linked with this marvellous change.

ALFRED CLEMENTS, Philadelphia.

I can write but little of our friend and brother, Edward L. Wilson, so unexpected and so near his departure, his life so large that one must have time to measure to comprehend it. I never met him but a few times, but his personality has been coming to me monthly since 1870, and was a tradition in our family even then as the "champion," the "Plumed Knight," of our profession.

How much this means only those know who followed his leadership through the Bromide war, the Shaw fight, and other schemes to exploit photographers. Looking over the volume 1870 I find him summing the year's work in these words: "After seven years' labor in the editorship of *The Philadelphia Photographer* we hope our readers are convinced of our devotion to their cause. We expect to continue it and hope to deserve reciprocation. We shall worship no man, his process, or his cause. On all things involving the common interests we shall speak freely, apprizing the fraternity of their rights in all things, our main object being to work for them in every right direction and to elevate them to a higher standard as professionals, thus elevating the beautiful art we advocate. We shall applaud the good and point out the bad always, so far as our ability extends."

How well he did this always! how modest these words after that strenuous year of 1870—after imprisonment, calumny, financial embarrassment, bickerings, unfaithfulness, and his glorious victory over the Shaw patent, his proved devotion to the cause! The Convention of 1870 was an ovation to him, and E. Y. Bell, in a speech comparing that year's success to the erection of a statue, said of his work: "Why that shaft stands there a monument of success that should be engraven upon the tablets of every photographer's heart."

So is his life's work. Other names will be immortal in the annals of photography for research, discovery, and invention, but Wilson's for championship when photography was threatened as an art, as a profession, as a business. I am not competent to write concerning his history; will leave it to abler hands.

To the champion, the friend, the teacher, farewell! Ever must I think of him as one noble, just, kind, brave! His well-done deeds will live, will speak for him! Peace to him, for well has he earned it, and to those aching hearts who lived in the light of his love, my heartfelt sympathy! Be brave; falter not; life is worth the living, for he hath lived and left such memories as console and encourage.

A. B. STEBBINS, Canisteo, N. Y.

Edward L. Wilson might be called "the schoolmaster" among photographers. For over thirty years I remember him urging photographers to higher ideals, insisting that theirs was an art requiring talent, training, and study. He was always willing to give others the best of the knowledge he possessed, and that at a time when the whole business was fettered with secrets.

He gathered information from every part of the photographic world, distributing it through his various publications and the numerous books he published. He was the oldest and best teacher photographers had, and his monument will be the work he did for photography in America.

S. H. HORGAN, New York.

Editor "Process Department," *Inland Printer.*

Your brief note brings the saddest intelligence that has come to me for many a day. In the death of Edward L. Wilson I feel as if I had lost a much-loved brother, although circumstances have kept us apart for years.

We first met at the Philadelphia Centennial, where he was probably the first to undertake a great responsibility, that of Official Photographer with all that it implies; faith in himself, the ability to communicate that faith to others who could supply the capital he lacked, and energy enough to carry out a great undertaking for which he had no precedent to guide him. The friendship formed then was continued all through my subsequent residence in Scotland, kept alive by frequent communication, his letters being full of almost boyish light-heartedness even when troubles, not light but lightly borne, frequently beset him. On my return to make a permanent home in this country one of my greatest pleasures was the renewal of our personal intercourse.

Although not the first, he may be said to be the father of photographic literature in America; and in the establishment of the *Philadelphia Photographer*, notwithstanding his energy and his faith in the art, he little dreamed of the structure that was to be built on the foundation he then laid.

Dr. Wilson may be said to have devoted himself soul and body to the advancement of the art he loved so well, and, if possible, in a greater degree to the welfare of those who adopted it as a profession. Nor was his work confined to the magazine, exacting as that was, being practically without aid for many years; but he has left memorials in books that will live long after the more ephemeral magazine articles are forgotten.

But, to us at least, his greatest memorial is his *In Scripture Lands*, written, as he says himself, "to be helpful to the further study and enjoyment of the events that have made the Scripture lands the most interesting of any in the world." It is a book by a Bible lover to Bible lovers, illustrated with the eye of the artist and written in the faith of the Christian rather than that of the fanatic; and although I have been adding book to book for many years, I value it both for its intrinsic worth and for the sake of its author and donor, far above anything else in my library.

Good-bye friend Wilson, but only for a time that can now be but short, when we shall meet never more to part.

JOHN NICOL, Tioga Centre, N. Y.

Editor *American Amateur Photographer.*

Permit me to express my sense of personal loss in the death of Mr. Wilson, and also the great loss that has come to the photographic world in this bereavement. Mr. Wilson was the connecting link between the old and the new photographic world, between the generation that invented the art and that which brought it to its present state of perfection. He was the companion and friend of the leaders, while we belong, in the order of time, to the generation that has succeeded them; but he was a strong leader and safe guide to both generations, and it is hoped that his example will be followed by those who succeed him. His poise of character always seemed to me admirable, for, no matter how distracting the controversies on photographic questions were, he always pursued the middle course, inclining neither to the right nor to the left. The place he has left vacant in the ranks will be difficult to fill.

THOS. H. CUMMINGS, Boston.

Editor *Photo Era.*

It is with much regret that I learn of the death of Mr. Edward L. Wilson and to see the ranks of the grand old workers of photography still further thinned by the loss of one who worked so long and so faithfully for the welfare of the profession, and I have no doubt that my feeling is shared by every photographer, and more particularly by those of the Old Guard who worked shoulder to shoulder with him.

F. DUNDAS TODD, Chicago.

Editor *Photo Beacon.*

He was undoubtedly an uplifting force to photography as an artistic and a business pursuit during his active career, beyond any other one man—and as such should be held in grateful remembrance by every devotee of camera craft.

C. W. CANFIELD, New York.

It was with deep sorrow that I learned of the death of Mr. Edward L. Wilson, and I would like to express my sense of personal loss in Mr. Wilson's death and to pay my humble tribute to his memory and to the work he has accomplished in his long journalistic career.

A pioneer in this field of literature in the United States, his work has been from the first issue of the *Philadelphia Photographer*, nearly forty years ago, consistently and persistently directed to the elevation of photography and to the betterment of photographic conditions.

It seems to me that every working photographer in this country must feel a sense of personal loss in reading the announcement of his death, known, as he was, personally, to a large number of the craft during his active connection with his publication. His personal influence has done much to encourage and stimulate the photographic worker wherever he was known, and in his removal from among us photographic journalism has sustained a deep and lasting loss.

The fullest sympathy will go out to his family from a very wide circle of men who have profited materially by his personality and by his honest, straightforward, and wise counsels.

W. I. SCANDLIN, New York.

It was decidedly a personal loss and sorrow that I felt on receiving the sad news of the death of Dr. Wilson. Please extend to his bereaved wife my sympathies, and say that I will continue to do all I can for the magazine, which has been so much help to me.

The grave of Edward L. Wilson should be marked by a monument erected by the photographers of America, for to no other one man do we owe more for our present rank among the arts and sciences. In all that is progressive he has been our leader, without being an extremist; beginning at a time when photographers worked as mere machines, he has patiently, unceasingly, and unselfishly given his best efforts to our growth. He liked to help those who wanted to learn to do better work.

I received a characteristic letter from him nearly a quarter of a century ago, criticising, at my request, some work which I sent him, in which he said: "Your technique is good enough, and what you need is more study—more artistic refinement." Many of the maxims and axioms which he gave to us in those days of darkness, and which we read then with mild wonder and dim comprehension, have become mere platitudes to-day, and prove how perfectly the seed which he has planted has matured into ripened fruit.

CHAS. BUTTERWORTH, Portland, Ore.

We can safely venture to say that no name connected with the progress of American photography during the last half-century is better known than that of Edward L. Wilson.

He was so intimately associated with every movement, so inseparably identified with every advance, and ever in such hearty sympathy with the rank and file of the great army of professionals, that his loss will be deeply felt all over the country.

As the editor of one of the pioneer publications in America on the subject of photography, he stands pre-eminent; and no one, even in these days of rapid progress in the art, can turn over the pages of the *Philadelphia Photographer*, from its inception in 1864, without being astonished at the vast amount of information stored therein. One may understand how important this publication must have been to the practical worker, and at the same time appreciate the great responsibility assumed and the labor demanded by its editor in arranging, selecting, and adapting the varied, valuable contributions from active workers the world over. And furthermore, when one takes into consideration that this publication was not the only product of Mr. Wilson's untiring energy, but that he cheerfully and enthusiastically imposed upon himself the additional task of preparing and editing numerous publications on photography—not mere compilations of disjointed matter, but well-digested treatises

on the various departments of photography —we are astonished how so much could be accomplished by one man unaided, without an enforced seclusion from participation in the active life of the practical, working photographer. For Mr. Wilson possessed one of those comprehensive minds which could stand, as it were, on a higher ground and see the salient points of any topic almost at a glance, generalize and seize upon the important details of a subject without encumbering it with useless and bewildering minutiæ.

Not only is Mr. Wilson's name identified with the strictly professional life of the photographer, but he was thoroughly alive to every movement in the social and commercial aspect of the profession. He stands pre-eminently forward as the champion in vindicating its rights and in combating the abuses against which it was compelled to struggle by the actions of impostors and extortioners. In everything in which he engaged he not only entered with enthusiasm, but he had the faculty of inspiring others to work.

Possessed himself of untiring energy and a peculiarly sympathetic nature, he always imparted confidence to those who were doubtful of their abilities, and many a young photographer owes to him the impulse which made him successful. Though not really a practical worker, I do not know anyone in the profession who had a more comprehensive idea of the range of photography, or better judgment of excellency in artistic or technical work.

JOHN BARTLETT,
Editor *The Camera*, Philadelphia.

THE WORLD'S PHOTOGRAPHY FOCUSED.

MR. FREDERIC E. IVES, of New York, has been elected to the Fellowship of the Royal Photographic Society of London.

The Year Book of Photography for 1903 (forty-fourth year) has made its appearance in the familiar yellow covers. It is edited by Mr. Percy R. Salmon and comprises 600 pages of well-digested information on "Genre Work and Figure Studies," "The Science and Art of Copying," "An Index to Contributions to Photographic Science," "Practical Methods and Formulæ." G. Gennert, of New York, is the American agent of this popular annual.

A PARAGRAPH has been going the rounds of the leading German daily papers to the effect that a group of American capitalists have been negotiating for the purchase of one of the largest photographic raw and baryta paper factories of the Fatherland. The name of the establishment in question has not been disclosed.

A SINGLE slant skylight 10 feet 4 inches by 20 feet high, of ground-glass throughout, has been put in by Smith & Price, of Traverse City, Mich. The height of this light seems to be excessive, and we will be interested to hear of its success in practical work. The whole question of studio construction by the way, is very clearly dealt with in No. 50 of *The Photo-Miniature* series just received. This little booklet offers a veritable cyclopædia of information on studio building, with illustrations of the different styles, etc.

THE jubilee of the Royal Photographic Society was celebrated last month at the New Gallery, Regent Street, London, by a reception, address, and conversazione. Sir William de W. Abney, K.C.B., in his address urged the establishment of a photographic research laboratory, to mark the jubilee year, for he said it was the study of the scientific side of photography in which fresh fields of knowledge would be discovered in the future.

THE Northwestern Photographic Convention will this year be held at Minneapolis, August 26, 27, 28, just prior to the State Fair. A railroad rate of one full fare and a third for the round trip has been secured. Visiting photographers are promised a comfortable and profitable holiday, with abundant opportunities for instruction.

SIBYL

J. C. Strauss, St. Louis

FAMILY GROUP

E. L. Mix, New York

PORTRAIT

Otto Boyé, San Francisco

LITTLE WILLIE

Brock Studio, Asheville, N. C.

FLOWERS

Brock Studio, Asheville, N. C.

PORTRAIT

Elmer Chickering, Boston

PORTRAIT
Brock Studio, Asheville, N. C.

PORTRAIT
Brock Studio, Asheville, N. C.

ON THE PREPARATION OF COLORED SUPPORTS FOR PIGMENT PRINTS.

BY RICHARD BLOCHMANN.

(Translation made for this MAGAZINE.)

AMONG the numerous advantages of carbon printing should be included the freedom of choice in the tint of the paper to which the gelatine image is finally transferred. For there are refinements of harmonies between the color of the actual picture and its support—harmonies between two tones of color, which are not to be attained by the materials on the market. The number of tints in which tissue can be obtained is numerous certainly, but with regard to the transfer-paper the reverse is the case.

For this reason I have undertaken a series of experiments in search of a means by which the amateur photographer may prepare his own transfer-paper in the colors he prefers, and so be independent of commercial media.

I received two pieces of information which led to good results in my experimenting.

J. Gädicke, in his pamphlet on India-rubber printing, gives directions as to the preparation of the paper, as follows: A broad brush filled with a dilution of alum and gelatine should be drawn over a well-sized paper with swift, upright strokes.

The other hint was given me by the technique of coloring with aniline colors, by which the colored paper is rendered proof against the warm water used in developing the carbon print.

I experimented at first with Whatman paper exactly as one would in coloring wool, as I first washed the paper with solution of tartar emetic, then with solution of tannin, and dipped it in water before putting it in the color-bath. Unfortunately, I here experienced this disadvantage, that the joins in the paper were strongly marked, as the color laid itself over them unevenly.

On the other hand, I observed that the white transfer-paper lets itself be well colored and is proof against the action of warm water if first washed in the solution of color, and, after being thoroughly dried, is taken through the solution of tannin, leaving out the solution of tartar emetic.

After the bath of tannin the finished transfer-paper is washed; the receptive paper is extremely evenly colored. This last experiment I combined with the following prescription by Gädicke:

To prepare a colored transferring paper one should have a flat, soft brush, a sheet of glass to correspond with the size of the paper, and several saucers to hold the solution of gelatine. Likewise gelatine, alum, and the aniline dyes. The following-named colors I have used in my experiments: chrysodine for yellow, safranine for red, methyl for violet, and malachite for green. The first two colors, mixed, gave the several tones of orange, the last two a varied assortment of blues.

A sheet of the Whatman paper is cut to the size of the glass and laid upon the same, which is inclined slightly forward. Then the warm solution is evenly spread upon the paper with quick, strong, strokes, and then the paper is hung up near the stove on pins.

After a thorough drying comes the pickling, which is to render waterproof the stratum. This consists of putting the dyed paper into solution of tannin for five to ten minutes and shaking it from side to side to avoid bubbles. Still better, although seldom to be obtained, is a glass tank in which the paper can hang upright. After a short washing in clean water the paper is cleared of superfluous tannin, and is ready for use after drying. It will be found completely waterproof.

Tannin has here a double effect. Firstly, it hardens the gelatine and renders it insoluble in water. Secondly, it fixes the color onto the paper.

The home preparation of transfer-paper in the manner described above is not only preferable on grounds of ecomony to using ready-made paper, but allows of much greater choice in the matter of color, and

finally gives a peculiar effect to otherwise monotonous pictures if printed by means of pigment on several-colored toned paper.

For instance, in pictures with empty sky and little-disturbed horizon, which, as direct prints, are very monotonous. A pleasing effect may be produced by forming the transfer-paper from top to bottom with changing colors of blue over green and orange after yellow.

Each solution should have a separate brush. After some practice and attention clouds may be brought into the background.

Then the fact that pigment printing works with body colors is noticeable, inasmuch as a cloud before which a tree or such-like stands is covered by the pigment tissue, and so looks as though the cloud were passing away behind the tree. The sharpness of the pictere is in no way influenced, as is always the case in colored-glass transparencies.

In the case of pictures whose outline is more involved, it is sufficient to go over the principal surfaces with a light wash.

Although a good photograph which is favorable in these conditions does not need these means to be a success, they can be used in many cases where monotone pictures are in question. The toned transfer-papers will be found a pleasing addition to many pictures.—*Photographen-Zeitung.*

A SIMPLE CAMERA FOR ENLARGING NEGATIVES.

MANY a piece of apparatus which might be of occasional use to a photographer is not purchased because the cost is such a very real item. A man who is handy with tools can, however, often shape a useful accessory or piece of apparatus with no cost to it but the labor.

A very simple, sensible, enlarging camera was recently shown to us, and a description may help some of our readers in small places. The photographer who made the camera is a resourceful man in a very small Southern town; one who does the bulk of his work in tintypes or carte-de-visites; who has not a camera larger than 5 x 7; but who will occasionally get an order for a bromide enlargement, which he makes himself. When he found a need for an enlarged negative he obtained an old, white-wood box, and cutting the sides in a tapering way shaped it to a 17-inch box open at the ends, the large end being 17 x 20 inches, the small end 6 x 8 inches. This camera body is placed on a strong base-board, on which the 5 x 7 camera is also placed, with its lens facing toward the smaller opening. The focusing screen of the small camera and the large opening of the home-made one are parallel. A broad lip or flange of wood is placed round the small opening, and over this a sleeve of close-woven cloth, black lined with red, is drawn; the other end of the sleeve fits closely over the lens of the small camera. As the photographer does not possess a shutter, a second sleeve is sewn into one side of the connecting one. This fits tightly round his wrist, and allows him to remove the lens cap.

The plate-carrier is the most ingenious expense-saving item, for it is made of a printing frame, with deep grooves nailed all around it to hold the dark shutter, which in this case is a sheet of vulcanite. The negative to be enlarged is placed, facing the window in an upper room, in the small camera. A piece of oiled paper, stretched on a kit, is first placed in the printing frame and used for focusing. The frame is then taken into the dark-room and a plate substituted for the oiled paper. A piece of black velvet is used for backing to the plate. The frame of the camera is made broad and velvet-lined, so that the plate carrier presses firmly against it where it is held in position by wedges at sides, top, and bottom. The aperture through which the shutter is drawn is double, covered with velvet.

This camera does not leak, because it is well put together. With no foolish exposure to sunlight or unnecessary light, the plate carrier works perfectly. It is all a matter of sound construction and careful handling.

MR. PIRIE MACDONALD reports complete success of the Hewitt light in portraiture.

THE CONTROL OF COLOR IN NEGATIVES.

BY W. E. A. DRINKWATER.

THE columns of the *Photographic News* have recently contained a statement by an American worker, Mr. F. J. Clute, which, if accepted as an axiom in developing, should result in better work from the hands of many photographers. I say "if accepted" advisedly, because I have not yet been able to absolutely verify his statement. Nor am I prepared to contradict it. On the face of it the dictum laid down appears logical and should hold good in practice. Perhaps my failure to entirely confirm it may arise from the class of plate I habitually use. Anyway, the matter is worth following up.

Perhaps I had better quote Mr. Clute's words. "The moment the highest of high lights are through to the glass, additional development serves only to destroy the relative values of the scale. The slightly weaker high lights are forced to the same opacity as the highest without these latter gaining in the least. The negative has lost one tone in the scale." The same writer, in a previous article, suggests that a negative developed by this rule will probably appear too thin when fixed, and further suggests as a remedy less sulphite in the developer, which means, of course, more "color."

Now this question of color ("stain" some people wrongly call it) has for some years received a good deal of attention from me, and I would like to suggest to pyro workers that the additional color can be introduced into a negative, or omitted, at will, without altering the constituents of the developing solution; in fact, that *the amount of color that shall be present in a negative is under control*, and judgment may be safely left until fixation is complete and the printing value of the negative can be accurately gauged by white light—daylight by preference.

Mr. Clute does not mention in either article any particular formula. I have a fancy that on "the other side" carbonate of potash is a good deal favored as the alkali accompanying pyro. On this side carbonate of soda is much more generally used. I have not much experience with potash, but so far have found that it is apt to give yellower negatives than soda or ammonia, unless kept in check by a greater proportion of sulphite. My further remarks may, however, be taken as applying to pyro soda, and the same principles can be adopted with either of the others mentioned, although ammonia is much the least susceptible to the changes.

I will take, then, a typical formula in which the No. 2 solution consists of soda carbonate, one ounce; soda sulphite, one ounce; water, up to ten ounces, and with it I find that the color of the negative is entirely dependent on two things—first, the length of time allowed for washing between development and fixation; and, secondly, the length of time allowed for washing between the fixing bath and the alum bath. (Incidentally I must mention that I never alum a plate before fixation, regarding it as a most dangerous practice.)

The first washing is the important one. It does not apparently add to the color of the negative, but it undoubtedly confers upon the plate the power of acquiring color in the second washing. The length of time required for the first washing is directly proportionate to the amount of sulphite in the developer. Hence a plate that has had liberal additions of No. 2 solution to bring up detail will need longer washing than a normally developed one. Conversely a plate developed with a greater proportion of No. 1 solution for checking overexposure or increasing contrast will not need so much washing. The latter statement will not hold good if the No. 1 solution contains a large proportion of sulphite or metabisulphite.

To prove my point I suggest the waste of a few plates. After development plunge the first plate into hypo without washing or with only the merest rinse. When fixed, again plunge into alum without washing, or only slight. The negative, if normally developed without additions to the developer, will be particularly free from color, and if large additions of No. 2 have been made during development, will be almost as blue-black as a metol-developed plate.

Another plate treated exactly the same until fixed, and then washed without alum, will be found to have acquired yellowness to an infinitesimal extent which is hardly worth consideration. A third plate, after development, shall have thirty seconds' washing before fixation, and when fixed it shall be placed directly into alum. It will be found very similar in color to No. 2. But a fourth plate, treated as No. 3, up to fixation, and then washed without alum, will have a decided accession of color, and this yellowness forms up gradually in the final washing, sometimes taking a quarter of an hour to reach the highest point.

Arguing from this experience I suggest that a fifth plate be treated in the following manner: After development wash for one minute and allow at least ten minutes for fixing. When withdrawn from the hypo bath make a judgment in white light as to its printing qualities. Is it inclined to be a slow printer from overdevelopment or overexposure, or both? Then plunge into alum *at once*, thus preventing any further accession of color. Is it full of detail, but lacking in pluck? Then put it under the tap to wash, and meanwhile keep an eye on it as the color gradually forms up in it. At any desired period in the washing the accession of further color may be stopped by the use of the alum bath; in fact, the alum will remove a trifle of the yellowness, so it will be well to let it wash a little longer than the apparent need.

The washing should be performed, if possible, under a tap. Mere soaking in water does not have the same effect unless protracted for a considerable time. But those to whom the running tap is inconvenient may attain the end by dipping into a dish of water and draining the plate, repeating the operation every few moments. This applies to both first and second washings.

The yellow color attained by this method should not be confounded with "stain" or general discoloration of the gelatine. It is very different from the latter, in that it bears a direct proportion to the amount of silver deposit composing the image, scarcely forming at all in the shadows; the action is, therefore, very similar to intensification. I have been much surprised to read occasionally in the photographic press statements made by responsible writers to the effect that if a yellow-colored negative is desired it may be obtained by soaking in stale pyro developer. The statement is true, but at the same time utterly misleading, because the result is general stain (and even that takes a long time to form). This stain is, however, a totally different thing to the selective yellow coloration produced by washing as here described.

I have no desire to argue the vexed question of a colorless negative developed to correct printing density *versus* a negative whose printing value is partly dependent on a yellow coloration in the image proper. Many photographers are in favor of the latter class, and for such workers I have stated, as simply as I can, the method by which I control the amount of color present in a pyro-developed negative.—*Photographic News.*

UNDEREXPOSURE.

BY F. H. C.

THE complete preventableness of the commoner errors is one of the wonders of the photographic world. No one who has noted the specimens of a large number of photographers can fail to have repeatedly seen instances where the wrong thing has been done without the slightest saving of time, trouble, or money. Why should these things be? The probable reason is the lack of intelligent observation, which is one of the favorite failings of a number of photographers. They have a fixed routine of work and never vary; they have turned out just one brand of just one pose so long that it has become mere unintelligent routine.

In looking at specimens from hundreds of photographers—those photographers who do a cheap class of work for our farmers, and miners, and artisans—I have noticed

with some surprise the prevalence of underexposure. It is so common that there must be some explanation of it. Is it that the customers like that class of thing? They take it and are apparently satisfied with it, but to suppose that they *demand* it (that demand of the customer is a much worked excuse) is very difficult. The workingman does not, perhaps, appreciate either matt prints or "new" school work, and he has a natural desire to doff his overalls and be seen in his best attire: but he can appreciate good technique if he gets it, and will not require much "educating" to it. Too often it is the photographer who needs the educating—and when he gets it his business feels the help.

One of the first requirements of a good photograph is a soft and delicate lighting. Few working-girls will object to that, but they get instead hard, fixed expressions, compressed, immobile mouths, and staring eyes. The pictures entirely lack all the delicate details which make for distinctive likeness. In real life a healthy, happy girl is a pleasing sight. Some of them have complexions, and we are told (not altogether truthfully) that the camera cannot take note of complexion. But it can take note of the smile or the life lurking in the corner of the eye or around the mouth. Most of this is banished by the photographer's trussing of his sitter—the head-rest still exists in many a country gallery—and what little is left has not a chance in an underexposed negative.

Underexposure means hard, white faces, strong patches of light and deep shadows. Where retouching is done a certain amount of polish can be given to a hard face, but the likeness cannot be pencilled in. Underexposure adds age, and at no period of their lives are people flattered by a suggestion of many years. The whole secret of successful pictures of old people is a full, almost over, exposure with soft development. This softens the shadows and softens the wrinkles; and a fully exposed plate is three-fourths the battle to the retoucher. Let a photographer once learn to take soft, pleasing portraits of old people, and he will find more grandfathers and grandmothers coming to the gallery. Or take the other extreme—babies. What countless thousands of babies are brought, during their long-clothes period, to the studio. There is—except the "nude"—one special baby pose in small galleries. The baby's head figures near the top of the print, and baby's dress spreads like a fan across the print. So far so good. It is of course possible to have several more or less stock poses for babies, but this one seems sufficient in practice. But the dress usually has several rows of lace around it, and some work which at least is not a plain level expanse of white. In the photograph all this is lost; the dress is a white patch against a rug. It seems self-evident that mother would not complain if the frock stood revealed, a mass of fancy-work.

But babies are difficult little creatures to handle; they are so restless. Is this why they so consistently receive insufficient exposure? Perhaps so, but the argument does not hold good for old people, or for any people who are old enough to understand the need for stillness. Underexposure is a preventable fault. There was a time when albumen paper was invariably used, and when the slightest suggestion of modulation in a hard spot was noted by the paper. But newer papers have demanded softer negatives. Some photographers have not yet learned that sufficient vigor has no necessary connection with great contrast. One of the most curious things in this connection is the consistent abuse of platinum papers in some galleries. Platinum paper is a higher-priced line and a profitable one; it is the star process of a photographer who does not use carbon. But platinum is not here to stay merely because it is a "permanent process;" it is here largely because it is a beautiful process, unsurpassed in its delicacy and softness, and the purity of its tone. But the worker in underexposure gets a negative which is at its worst in platinotype; he misses all the real beauty of the platinotype, and his only reasons for offering his prints are their reputed permanency and their reputed fashionableness. Add the visible beauties of the platinotype to those assured merits, and surely it would be easier to persuade the public. In some galleries there is but one camera and an old-time lens, which does its work but has not the speed of a more modern one; in some galleries the light may be not too abundant. But these are

occasional defects, not so widespread as the defects of underexposeure. And even working with lenses or light with limitations, underexposure is not always necessary. The fact seems to be that photographers underexpose because they have done so, and continue to do so. If the worker aims at a sufficient exposure he can usually attain it; that he does not do so is one of of the inexplicable things of photography.

The most obvious faults of poor work are the faults which can be the most easily remedied, and without any loss of either time or money. Underexposure is one of the worst of these faults, and it is one of the simplest to steer clear of.

TO DUPLICATE NEGATIVES BY OVEREXPOSURE.

BY DR. OTTO PRELINGER.

(Translation made for this MAGAZINE.)

IF a plate is exposed a thousand times longer than is sufficient to produce an ordinary negative the result, on development, is not a negative, but a positive. This remarkable fact, which we call solarization, and which has not yet been fully explained, was first observed by J. Janssen in 1888.

Ten years later G. Koppann & Co. drew attention to the use of solarization as a probable practical means of obtaining duplicate negatives.

They exhibited samples before the Vienna Photographic Society. They used negatives of medium thick density, and worked with ordinary bromide of silver plates. The exposure given was thirty seconds in the sun, and from ten to fifteen minutes in the shade. According to the length of exposure or the modification of the developer they succeeded in obtaining a soft negative from a hard one, or a strong negative from a weak flat one.

Attention being thus drawn to the subject, other writers discussed it. Not every plate nor every developer yields satisfactory results; and this is probably the reason why this method of reproduction is not in more frequent use. Certain it is that the particulars published leave much to be desired on the side of completeness.

An interesting article on the subject, presenting several new ideas, was published by M. H. Reeb in the *Report of the Société Française Photographic*. He is very positive that the method is a practical one, and that faultless results may be obtained if the *exact* time of the change in the plate be determined. To obtain this the following experiment was made. A hole was cut in an opaque card and exposures of this clear hole were made, in diffused daylight, for 5, 10, 20, 48, 80, 160, 320, and 640 seconds. The plates—all the exposures could more easily be made on one plate—were developed and fixed together. In examining them it was found that with a certain length of exposure (in this instance it was eighty seconds) the changing of the plate was most clear, while the clearness of the exposed spot diminished by either a shorter or a longer exposure. The length of exposure will, of course, vary according to the time of year or day, intensity of light, etc.

Reeb gives the following table of units, in seconds, obtained by exposing an "extra-rapid" plate in the shade, in clear weather:

	11	10	9	8	7 A.M.
	1	2	3	4	5 P.M.
January-December,	14.0	15.6			
February-November,	12.0	12.8	14.8		
May-October,	9.6	10.4	12.4	14 4	
April-September,	8.4	9.2	10.8	12.4	14.0
May-August,	8.0	8.4	9.6	11.2	13.6
June-July,	8.0	8.0	8.8	10.0	12.4

For exposures in direct sunlight the table may be divided by four.

With a slightly clouded sky increase the exposure by one-half.

With a very clouded sky double or treble the exposure.

These times are obtained by exposing the plate directly to the light, here represented by the hole in the card. A piece of sensitive paper will not print as rapidly under the clearest spot of a negative as when exposed directly to light; and so the

time of exposure for the clearest space in the negative must first be decided.

For this purpose the negative should be printed on a scrap of sensitive paper and the time noted during which the clearest part of the negative prints to a certain tint. This is compared with the time required to reach the same tint with a piece of paper exposed direct to light. If, for example, the sensitive paper under the negative takes 27 seconds, and takes 9 seconds when exposed directly to light, then the number of this plate is $27 : 9 = 3$.

The numbers on the table must be multiplied by this coefficient in order to obtain the correct exposure for a plate that is to be reproduced. The correct development of the plate is a vital factor when good results are required—as surely they *always* are when this method is adopted. Unfortunately, Reeb does not help us much here. He tells us that using pyro, iron, metol, or glycin developers his results were poor. So far his notes are interesting, but when we come to the constitution of his developer we are referred to an advertisement in another part of the report. It is to be regretted that no adequate working details of his formulæ are given. It seems like trusting a great deal to his sense of business when we inquire as to the composition of his production. In any case we may remark that it is rather disappointing to find an interesting scientfic article ending with trade secrets.

The whole question is an interesting one and deserving of further consideration. In order to encourge every attempt at experiments in this line we give the formula of a developer used and recommended by Kiewning, another experimenter in this line:

A. 100 parts water
10 " hyposulphite of soda
3 " hydroquinone.

B. 5 parts water
1 part carbonate of potassium.

For use, 3 parts of A are mixed with 1 part of B. Development should be much slower than in normal work; an old developer which has been several times used yields the best results.—*Photographische Correspondenz.*

LEIMDRUCK—A NEW PIGMENT PROCESS.

DR. LUDWIG STRASSE describes in a recent number of *Photographische Rundschau* an interesting pigment process similar to the ozotype method invented by Manly and the starch-gum process given by Foxlee, but simpler and cheaper than either of these methods. We extract a translation given in *The Photographic Journal* for March:

1. *Choice of paper, preparing and sensitizing same.* For large work rough paper is recommended and for small work smooth. A concentrated solution of gelatine and potass. bichromate is used to sensitize the paper. Make a 40 per cent. stock solution of potass. bichromate with distilled water. For ten pieces of paper each 10 x 12 in., dissolve, by heat, 75 grains ordinary colorless cooking gelatine in 1 ounce of water, and add 1 ounce of the above solution, mix and allow to cool, when, owing to the presence of the chromate, the gelatine remains at about the consistency of ordinary mucilage.

Fasten the paper to a board and lay on the gelatine chromate solution evenly, but not too thinly, with a wide brush, and dry in the dark at ordinary temperature. The paper can be kept in the dark for eight to fourteen days; the gelatine solution is best used fresh.

2. *Printing.* This is done in the usual way and until the details in the high lights are clearly visible. Over-printing is better than the reverse. The paper is about as sensitive as collodion paper, and the best results will be obtained from negatives with good contrasts.

Laying on the color. The coloring matter consists of some kind of pigment, gelatine, acetic acid, and glycerine. The pigment must be insensible to acetic acid and, on grounds appearing later, weak alkalies; the choice of color is therefore somewhat restricted. Lampblack, mineral black, kasseler brown, vermilion, sap green, etc., are available.

Chrome green gives in the finished picture a good dark blue. As a rule, these

colors can be used in powder form, but for fine details tubes should be used.

Gelatine solution, mixed with acetic acid, as is known, does not congeal on cooling, but unfortunately after a few hours this mixture loses its qualification for this process, so cannot be kept as a stock solution. The following will be found the most comfortable method of working: dissolve, with heat, 150 grains kitchen gelatine in 3 ounces water, add 1 ounce glycerine and a little carbolic acid, and keep this mixture (which congeals on cooling) in a thin glass bottle

Before use melt by standing in hot water and mix 120 minims with 50 minims concentrated acetic acid. Then add sufficient coloring matter, so that when laid on not too thinly the color covers well, but is still fairly fluid. The troublesome rubbing in of the color is easiest done by mixing with a small stick and passing the thin pulp through a brass wire sieve. The quantity given is sufficient for a picture 16 x 20 inches. The coloring mixture is spread quickly and fairly thinly on the unwashed print in subdued light with a soft brush, and evened up with a badger hair softener. The sheet is then dried in the dark, requiring one to two hours.

4. *Development.* This can be done immediately after drying or several days later (the picture being of course kept in the dark meantime). The development differs from that usual in gum and carbon pigment processes, as the gelatine-color film is barely soluble in even boiling water, but is in warm slightly alkaline fluids. For practical work the following is recommended: The print is placed in an enamelled iron or zinc dish, and well covered with a 1 per cent. solution of common washing soda, and the fluid gradually heated, the dish being kept in motion. After some time, according to the length of exposure, thickness of coloring, duration of drying, and the temperature of the soda solution, the high lights begin to be visible. It is now taken out and fixed to a board with drawing-pins and sprayed with water by means of a pipe fixed to the ordinary supply, at first gently through a fine rose, increasing the pressure by degrees. If the picture does not come up sufficiently quickly it is returned to the warm soda solution, heated again, and again sprayed until the desired result is obtained. In order to lighten up parts of the picture or bring out details in the shadows, these parts can be sprayed more strongly. Partial development with even a soft brush is not to be recommended, as too much color is likely to come away, but after drying small portions can be lightened up with erasing rubber. When sufficiently developed the picture is passed through several changes of water to remove any traces of the chromate, and dried. The picture when finished is matt, but the colors can be made somewhat fuller by painting with a very thin spirit varnish without a disturbing glaze appearing, and the pictures are also protected by it.

THE FADING OF BROMIDE ENLARGEMENTS.

BY W. E. WOOD.

We were recently shown a family portrait gallery consisting of seven bromide enlargements. The oldest one was made ten years ago and was practically unchanged. Of the other six, only one was perfect, and the most recent one—made about two years ago—was very perceptibly altered. It was the old question and the old complaint: "This process was guaranteed permanent; should the pictures fade like this?"

Considering the many able men who have devoted much time to intelligent research in the question of photographic permanency it is surprising how little is commonly known or understood on the subject. No process, not even platinotype itself, can withstand the treatment which may, carelessly or ignorantly, be wrongfully applied to it. On the other hand, there are many processes less permanent than platinotype which are sufficiently lasting if only reasonable sense is used in their working. Take the cases of Velox, Dekko, and similar papers. Anyone acquainted with photographic chemistry knows their constituents

and how the papers are made. There is no more secret in them than there is in dry plates. Anyone, too, knowing the papers, knows that the image obtained is permanent, and that the paper on which the emulsion is coated is the purest photographic brand. And yet people who do not understand the paper in the least will dabble with chemicals of which they know still less in an endeavor to obtain some unnatural tone or effect, which was never intended, and is impossible, and which is considered "artistic."

The proof of permanence of "silver-prints" often quoted is the fact that there are many prints in existence, made half a century ago, which show no signs of fading, although no especial care has been taken for their preservation beyond the initial care exercised by the photographer in producing the print.

The occurrence of these perfect prints counteracts the impression formed by looking over an album of portraits twenty or thirty years old, where we often see glaring examples of impermanence, and suggests that the fault is not in the process but in the manipulation of the workman. The gelatino-bromide process has not stood the test as long as some methods, but it is a score of years old, and some prints made on its first introduction still hold their original color and vigor. This tends again to put the blame for many faded prints on the worker and not on the paper or the emulsion.

One of the good things about photography—from a professional point of view—is the busy season. We should not care to be forever finding things slow, and, next to keeping steadily busy, we like a rush of trade at certain seasons. But this rush makes us hustle the work through in the minimum of time rather than with the maximum of care. Mistakes in development, or washing, or fixing will surely affect the print sooner or later. A most common cause of disaster is lifting the developed print directly from an acid bath—or giving it just a splash of water first—into the hypo bath. The print naturally contains free acid—the ferrous oxalate was acid, and the intermediate bath was the same—and the acid works on the hyposulphite of soda, releasing sulphur and other objectionable things which are bound to tell sooner or later. The fixing, too, may be worked so as to cause fading. If the fixing is not sufficient no amount of washing will guarantee the print. The first action of the hypo is to form a compound with the silver which is insoluble in water, but which is dissolved by a further quantity of hypo. If the print is removed from the fixing bath too soon it contains a certain amount of this hyposulphite of silver, which was being dissolved out by the action of the free hypo. The water will wash out the free hypo, but it does not affect the insoluble salt, which remains in the paper for future destruction. A fully fixed print is not likely to suffer after a moderate washing, as the salts are then soluble; but if the fixing is not completed any amount of washing which a print is likely to receive will fail to remove the insoluble salts. Properly handled, the bromide print should be as permanent as any silver process, but if hasty and inefficient methods of work are followed the complaint of fading prints is sure to follow.

A DAY'S WORK.

BY PAUL CLARE.

I HAVE just had Smith in to waste an hour of my time. Perhaps "waste" is too harsh a word for I'm always glad to see him (which doesn't help my case) and, which is more to the point, I always learn from him something worth knowing. Smith was cursed with moneyed parents. That is, they could comfortably afford to believe that their son was a genius, and needed only a European training to become a great artist. Like a few thousand other parents, they sent young Smith abroad, and he studied a couple of years in Paris, spent a year roaming through Italy, and a fourth year in London. Now he's at home again. If Smith senior had

earned $15 a week and come from work every night with greasy overalls and begrimed face, Smith junior might now be getting his $2000 a year as an ad. writer. For he's a smart lad with a natural gift for swinging both pen and pencil. But his training has spoilt him for work; he loafs nine-tenths of his time and works when he's broke. Smith will get a sketch to do—an hour's steady work—worth $5 to him; he spends a day smoking cigarettes and waiting for inspiration. About "bedtime"—most vague hour—he begins to work, and finishes his sketch in the small hours, or next day. Sooner or later Smith will be earning his living doing comics for the Sunday papers.

It is not the *almost* genius who gets along; it is the man who knows the number of hours in a day, and who makes them all count. The great majority of our wealthy men are hustlers; and the real wealth of the country—as distinct from the wealthy men—is in the farms and the little homes paid for, or being paid for, dollar by dollar, as the time-earned money comes in.

Photography has been dubbed an art. The people who so christened it were well-meaning, and in trying to boost the work of the camera they did not forget that they should themselves be termed artists. Why artists? It would seem preferable to be shrewd business men. The artist—when he leaves the student stage, and before he blossoms into the swelled-head stage—is content to do his work without worrying about his title. He wonders who buys art furniture and art hangings, and surrounds himself with the homeliest and cheapest of possessions, and if his nature is very retiring he pins a sheet of brown paper across the window for a screen. A man may have abundant business ability and many business virtues, but if he lacks the cardinal virtues of action and promptness his other many good points will not keep him from disaster. To have action and promptness means to do a thing, and do it now; not to start a thing, and start it to-morrow. And doing a thing is the surest way of getting there. The photographer—that is, the beginning photographer—has some business disadvantages as against beginners in other businesses. In a gallery hours and work are not regulated by the pulse of an engine. The beginner may have a finger in a dozen processes, but is not kept steadily engaged on any one thing. Part of his time is idle time, and he learns the convenient habit of "hanging around" until the next thing turns up. If he grows into a manager of a branch or to a business of his own, too often the hanging-around habit continues with him. It is a hard fact that there are hundreds of photographers who are grubbing along in a deadly rut, daily waiting for their day's work to turn up. Nothing is harder than for a man to extricate himself from a fixed groove, and the greater number of those who are there will probably so remain until the end of their days. But by those who have not drifted there the importance of the day's work cannot be overestimated. A man who just *exists* by awaiting events will *live* if he brings prompt action into his work and makes each day and every day show its adequate result.

ARE WE WASTEFUL?

BY J. F. DUNN.

How often we have been told that we waste enough of plates and chemicals to seriously diminish our bank balances at the end of the year. It is quite possible that some men are foolishly wasteful, but there is another side to the question. As a photographer who often exposes eight or even a dozen plates where two would suffice, I feel that I have some right to express my views on the matter. It is better to be wasteful than to be too parsimonious. Where a man is doing dollar-a-dozen cabinets he cannot afford to expose more than one, or at most two plates. But where a man is getting eight dollars a dozen—as I do for my platinotypes—it is a good plan to be generous. However experienced a photographer may be, he will always find that where he makes eight or nine exposures there are two or three of the negatives

which are better than the others. Exposing eight or nine plates results, therefore, in being able to send out a better average of work than if only two or three plates are exposed.

This is no argument in favor of *careless* work. The best and highest-priced photographers are usually the most generous in the number of their exposures. It is better to supply from the best two negatives out of eight, at eight dollars, than to make two negatives only and supply from them at five or six dollars a dozen. The customer pays the fair price because he knows he gets good work at this studio, and a reasonable lavishness is a means toward good work. In other words "the consumer pays the tax."

I have chosen plates for an example because they are the great expense among material. But the same argument runs right through the business. Wiseacres—who probably have never worked under a skylight—have even told us that we ought to use our developer twice over, because one using does not "exhaust" it. This is the extreme perhaps, but it has been urged.

Printers may be careless, no doubt, and spoil prints; but it is not always easy to get a batch of a dozen which are all uniform, and it is better to print extra ones than to deliver prints which are not up to quality.

Reasonable care and a watchful eye against needless waste are good things, but a sermon against waste is as often as not an argument for parsimony. It is beginning at the wrong end. Instead of paring down the bill for materials photographers should watch that they turn out none but good work. Instead of saving their living out of the stockhouse they should make it out of their customers. Their motto should be "one quality only—the best—and a fair price." If this is lived up to there will be no need to worry about waste.

THE USE OF A MIRROR.

BY JAMES EPPS.

THE use of a mirror as an aid to the photographer is not as fully understood as it ought to be. I do not advocate that every photographer should forthwith invest in a mirror and use it as an accessory; but he may well know of its use, for there are times when the possession of one may prove of real service.

As an "accessory"—using the word in its commonly accepted meaning—the mirror has its use. Multigraph portraits, given by two mirrors placed at right angles, are well known. The single mirror, giving two views of a face, or one of face and one of coiffeur, is an accessory which deserves wider use than is accorded to it; but the mirror's usefulness is not confined to the visible accessory. There are times when a photograph taken through a mirror, instead of direct, is a real advantage; and often a picture may be taken by aid of a mirror when it is impossible to take it direct.

The process-worker includes a mirror—often a silvered prism—as an essential part of his stock-in-trade. It is as necessary to him as his lens, and almost more valuable; for a process mirror is silvered on its surface, instead of behind the glass, and a surfaced mirror needs very delicate handling. The photographer does not need so fragile and expensive an instrument, and so he turns to the first handy mirror in his home. With this he finds that he gets a double image—one reflection from the front surface of the glass and one from the silvered rear surface. This double image is sufficiently emphasized to be apparent in the finished print, and so mirror photography is dropped.

The need of a mirror—except as an occasional visible accessory—is not felt by the man who does all of his work under his own skylight. He is, of all men, the one who can continue to work with a minimum of adaptation. But to the man, professional or amateur, who works in a variety of rooms, the mirror is often better than direct portraiture—and at times it can be used when direct work is impossible. For, by photographing through a mirror we can

get several feet further from our subject than when we photograph direct; and a few feet are all important when space is circumscribed.

In photographing a room the mirror may be placed diagonally across one corner, and will reflect practically the whole room; a camera placed, not directly in front of the mirror, but slightly to one side, so as to avoid its own image, will see more of the picture than if the lens gazed directly on to it from the position occupied by the mirror. In portraiture in an ordinary room there is little possibility of adapting the light to the sitter; the sitter must be adapted to the light. With a mirror we have more latitude as to the posing of the sitter.

In photographing interiors the double reflection, using a good mirror, has proved a theoretical rather than a practical objection. In portraiture a very ingenious dodge was suggested years ago by J. Traill Taylor. His idea was so to arrange the angles of sitter and camera with the mirror and with the light that the two reflections were superimposed. He placed the mirror close to a window, posing the sitter about a yard from it and in exact profile when looked at from the position of the camera. Then, with the camera placed as near the sitter as was consistent with clearly seeing the reflection in the mirror, a negative was obtained which showed no trace of any double.

It is in the photographing of still life that the mirror has proved most widely useful. For many years the use of a mirror has been one of the "secrets" of old-line photographers. But their mirror was a *black* one: that is, backed with a dead black instead of a silvered surface. Flower studies were produced by the aid of a black mirror at a date before orthochromatic plates were heard of, and such studies were the envy and despair of those photographers who, ignorant of the methods of their production, essayed similar work direct. There are many cases where articles of delicacy and value, such as chased metal work, can be better pictured via a mirror than direct. And in cases where the objects cannot be moved for photographing, the mirror alone makes their portrayal possible. In cloud, like flower, photography the black mirror is ideal.

The cost of a silvered mirror is considerable; but a black mirror is easily made. A piece of glass quite true and quite free from flaws is required; often the best is obtained from an old mirror which has outlived the glory of its youth. If such is used, the silver may be cleansed from its back by rubbing it with a coarse cloth dipped in diluted nitric acid—which must not come near fingers nor clothes. When the back is quite clean and dry, coat it with Brunswick black.

The black mirror gets rid of the double reflection by reflecting from its front surface, the black coating destroying, by absorption, any second image. Naturally exposures, especially when some red object —such as a flower—is being photographed, will be somewhat lengthened. In cloud photography the very slight lengthening is a positive advantage.

Images reflected by the mirror are reversed. Where a reversed print is inadmissible, a single transfer carbon or a film negative are the simplest correctives.

THE PROFESSIONAL PHOTOGRAPHER AND BROMIDE PAPER.

BY C. A. ZIMMERMAN.

It has always been a matter of surprise to me that the making of bromide enlargements is the exception instead of the rule in studios.

When you reflect that there are really no technical difficulties and no great outlay for apparatus or construction to be encountered, and infinite beauty of result is easily attainable, it becomes more and more difficult to understand what I cannot help terming a costly neglect. Your lumber room probably contains out-of-date and superannuated apparatus out of which anyone possessing ordinary mechanical ability can build up the working appliances. Artificial light or costly condensers are only called for in the

absence of a room furnishing ordinary daylight. When you are producing prints from your own negatives and for your own studio patrons, daylight will be amply sufficient, but should you go into bromide printing "for the trade" on a large scale artificial light as an auxiliary would be essential.

It is no exaggeration to state that the income of any studio can be increased 25 per cent. on an increased outlay of from 4 to 6 per cent. for material and cost of production.

A short illustration to bring the elementary principles of this method of enlarging clearly and promptly before you may not be amiss.

Proceed to make a cabinet negative of a sitter, and develop, fix and dry the same; now remove the ground-glass of the camera with which it was made, without shifting its relative position to the lens, and place the negative into the frame hitherto occupied by the aforesaid ground-glass; now place the camera in a window which is so curtained that the light will pass through the negative and not illuminate the room. Permit the resulting image to fall upon a white screen, being careful to move the screen into sharpness and *not* change the position of lens or ground-glass. If this has been properly carried out according to directions you will perceive that the image is exactly *life size*. If you were then able to cap your lens with a cap made of yellow glass which will permit the image to pass through and remain upon the screen, you would be able to pin your sensitive bromide paper correctly in place and proceed to expose and develop.

It is obvious, of course, that the size of the image varies with a change of position of either negative or screen. Until you have fitted up a bromide room you will have no clear idea of its utility and service. Not a day passes that our own is not in use; for there you can produce transparencies as well as bromide prints or enlarged negatives that cannot be told from originals.

Without at first going to the trouble of fitting one of your discarded 8 by 10 cameras to a window, try your hand at a simple beginning; hang tissue paper over a window free from sunshine, preferably in a room that has but the one. Place your cabinets or 4 by 5 negatives into an opening cut into a board; this board should be placed about a foot from the window and be large enough to cover it, the light reaching the camera or lens only through the negative that you have fastened into the opening. Now wheel your camera up into a position so that the lens points squarely at the negative, focus the image carefully upon the ground-glass and see that it is the proper size as well. For very dense negatives it will not be necessary to stop down much, but a trial or two will determine that. For a dense negative use "soft" paper and for a delicate one use "hard."

You expose the bromide paper to the image by using your plate holder, and you can improvise a method for holding it flat in place while exposing.

As you have "kits" for your plate holders you can make your exposure trials upon small pieces of paper before risking a full sheet. Your developer may be metol-hydrochinon; it is not necessary for me to go into details, I am rather of a mind to impress upon you by this paper the advisability of installing a room.

Platino bromide paper will furnish prints difficult to distinguish from platinotypes; they are absolutely permanent. If you will go through the process with ordinary care and with a desire to succeed, you will be delighted with the result, and if you have selected a negative that your customer is pleased with as a cabinet you are almost certain to dispose of the bromide "on sight," especially if you have exercised good taste in mounting and framing the picture suitably.

There is very little of novelty in what I have written above, and the old worker in bromides can skip it all, but the world is full of new students, and it is mainly for the benefit of such that I write. I will close by giving a process for mounting bromides upon thin mounts or leaving them unmounted, which may be done, as they will remain perfectly flat.

Make all your prints on paper one size larger than required; on taking such prints from the washing water blot them carefully with lintless blotter. Then lay them face down and apply a good paste (no home-made unless you make it part gelatine, for

it will not stick under the coming strain) for about three-quarters of an inch along the edge, and pass over it carefully so that you do not miss any portion. For prints up to 14 by 17 a heavy smooth straw or cardboard larger than the print will do (for larger sizes use drawing boards); upon this attach the bromide print by means of the pasted edges and lay over the centre a piece of the lintless blotter cut smaller so as to expose the *edge* which is pasted underneath. By doing so you will permit the pasted edge to dry while you are holding back the centre of the print from too rapid drying, which would pull up the edges. In large prints I have found it advisable to tack narrow strips of cardboard over the edge to help the paste out.

It will be well to tack your cardboard upon a board, for the pull of drying bromide paper is terribly strong until dry, when it ceases entirely. After you see that the edges are well set and in no danger of pulling up you can allow the centre to dry; I place the print in the sun quite often, which will remove the least trace of moisture. All the "kick" and curl will be taken out of the paper and you will find a fine surface unchanged by pasting, and when you cut the print off the board and attach it by the edges to a thin mount you will appreciate that it paid for all the trouble.—*Northwestern Photo Recorder.*

PORTRAITURE IN GERMANY.

SOME months ago our last words to a well-known photographer were: "Let us have something from Berlin." His report from that city was curt. "Old-line work of very moderate quality" was his verdict.

In spite of the work of one or two sound men, photography in Germany seems to be much in the same position that American photography was some fifteen or eighteen years ago. The surest evidence of this is found in the complaints of so many German photographers. According to a writer in the *Photographische Mitteilungen* there is not in Berlin a single professional working from a modern and artistic point of view, but "warehouse" photography flourishes, with extensive patronage in the highest circles. Since the wonderful and refined productions of the daguerreotype yielded to the collodion, and later to the gelatine plate, the retoucher has carried his work of destruction over everything. Beginning as a useful medium for correcting exaggerations and faults in the plate, the retouching pencil has now become an end instead of a means, and serves not to restore truth to nature, but to "beautify" *ad infinitum*. To a person who admires a face as a key to character and as some evidence of a battle with the storm and stress of life, these "beautified" images must be merely revolting. In spite of this they continue to hold the field. The head-rest flourishes in Berlin, and painted backgrounds and lavish accessories hold sway.

The German writer sees hope for his country in the rise of the amateur school—he is writing in an amateur magazine, and is evidently an enthusiast. The amateur certainly has had a share in the advance of photography, though by no means to the degree which he claims. Most of the advance has been by the fraternity without outside demonstration. In Berlin there is evidence that the photographer is moving. Probably the real cause of his inertia is the influence of "court circles." In England this influence has been very apparent. The royal family there have an appreciation of art which is essentially "burgeoise" and commonplace. The royal photographers are men who can turn out work a score of years behind the times—and who do so when serving their royal patrons. And this august influence, which certainly has not furthered photography in England, finds to a certain extent its counterpart in Berlin.

Bromide Developing.—A ferrous oxalate developer which is too weak gives mealy prints; too strong gives hard prints. Between these extremes we get soft prints, or prints with good, rich blacks, as we make our developer weak or strong.

LEAVES FROM A PHOTOGRAPHER'S NOTE-BOOK.

The "instantaneous" nature of flash lights has often been referred to by makers and others. Many photographers who have been "flashed" or have used the light believe that the duration of the flash is quite appreciable. The average duration obtained by testing several different powders proved about one-fifteenth of a second, and one of the flashes lasted about one-fifth of a second.

Red is a warm color; blue and white are cool colors. How cheerless it is on a chill winter day to see a cold, blue-water picture of a fishing fleet, or to be ushered into a "best parlor" where the furniture and wall-paper are blue! At present we are in the throes of the hot season, and coolness is advisable. It is too much to paint a studio or reception-room for the hot season, but many delicate touches are possible. The show-window or show-case may be lined in white, with just a touch of pale blue or gold. The pictures should be few in number, of delicate, "musliny" people—children, graduates, and the like—and mounted and framed in pale tints. The window or reception-room may have a few ferns, fragile rather than stocky. The reception-room girl may don her coolest blouse, and do not let it be a black one. Cool water, eau de cologne, clean towels, a few flowers, and white table cover should be in the dressing rooms. Everything must suggest air, coolness, and cleanliness. Many light touches suggest coolness, and none more than a scrupulously clean and polished glass bowl of water; whether a dripping filter with its lump of ice or a bowl in which goldfish glimmer, it matters not.

An Amateur Hint.—Amateurs are often in a hurry, and find that hot water expedites the solution of various chemicals; often, too, unfortunately, it does them no good. Hypo does no harm, though it will dissolve quickly enough in cold water if hung in a muslin bag near the surface instead of laid at the bottom of the tank. But hot water should never be used for developers.

Ladies as Photographers.—Why are there not more ladies using the camera for a livelihood? There are already a great number in the ranks of the profession, but they are commonly employed in what might be called "straight portraiture," by which I mean taking portraits on exactly the same lines as their men competitors. Is there not room for many women in specialist lines, as, for instance, the taking of children at home? If a lady became known in this one branch I venture to think that, if she were a capable worker, she would be very successful. She could also take children in her studio, if she had one, and the work under her own skylight would be much easier than in a strange room; but a woman, fertile in resource, could generally make satisfactory use of the lighting at home in those many cases where it is impossible to get the little sitters to the studio. The special adaptability of the woman to this class of work lies in the fact that she knows a hundred times as much about children and babies as does a man. She knows the thousand and one little points about dress, which are so all-important, and if she is the right woman she is understood of her juvenile friends, and they are as wax in her hands. I suppose a baby would sit for a lady at home three times as long as it would for a man in the studio; and the woman has the tact and the patience, and the love of the subject requisite to all success.

Slightly Fuzzy.—The use of a piece of very thin talc or glass between a negative and the printing paper is a good old method of slightly softening the lines of photographs, which is not as much used as it deserves to be. One of the most effective of "secret processes" was founded on this dodge. Half measures often give a very pleasing effect. Use a fine matt paper, and about half print with the paper in close contact with the negative. This will give a print too light, but sharp, as the basis of the finished print; then remove the paper and place a thin sheet of clear glass or talc on the negative. Readjust the print, carefully in register, over

the clear glass, and finish printing in a subdued light. The combination of sharply-defined and diffused printing gives a result often superior to the sharp, hard result of direct printing, and infinitely more pleasing than a mere "fuzzy" picture made by doing the whole of the printing through a piece of glass.

Negatives on Bromide Paper.—Many a photographer who does not lay himself out for large work has an occasional call for an enlargement, and usually he makes it on bromide paper direct. There are times when an enlarged negative would be useful, and whereas a glass plate of, say, 17 x 22, is an expensive item and difficult to handle in some small places, a sheet of bromide paper the same size is much cheaper and easy to manipulate. The supposed difficulty of a paper negative is the grain of the paper itself, but this difficulty can be overcome to-day as easily as it was fifty years ago—by waxing the paper. A solution of Canada balsam in turpentine—one part balsam to six of turpentine—should be applied with a sponge, evenly, to the back of the negative. A print from such a negative will be as good as one from a glass negative, and at about one-quarter the cost.

The Teaching of Evidence.—It is a common saying that we learn by bitter experience. Like many a common saying, it is only moderately truthful. Experience may be hard at times, as when a child burns his fingers; but for every child who really burns his skin there are many who have a due appreciation of fire and of its limitations of familiarity who have never experienced physical pain from fire. The man who is repeatedly coming in contact with "bitter" experience is the man who won't learn. Usually he has been doing fool things. Where a man finds by bitter experience that a fair percentage of plates turn out either overexposed or underexposed, it is evident that the man has no idea of observing, and of understanding such elementary facts as stops and light. Many a man has decided that platinum or carbon is an uncertain process, and not worth the candle to work. The fault is in the man and not in the process. The man who cannot master the various details of photography fails because he works by haphazard instead of trying to learn by the evidence of the result before him. Unless a man applies hog-sense and a little more, he won't succeed in photography. The man who works in the tropics in a makeshift dark room works under difficulties if he proceeds on the makeshift lines which pass at home. Darkness should not be manufactured by blocking out daylight and ventilation from some small room, but natural darkness, which will allow of all the ventilation there is, should be waited for. Dark weather is dark near the equator, and, with proper precautions, starlight will not affect plates.

In exposing Velox or Dekko paper under a negative the crux of the question is to get correct exposure. I know a photographer who turns out hundreds of prints every week and invariably exposes to daylight; but daylight is too variable and too intense to be safe for the greater number of workers. A Welsbach incandescent mantle is a good light. The negatives I make run fairly even in density, and I expose a 5 x 7 for thirty seconds at nine inches from the light. I have a rest on which to place the frame, so that it is not inadvertently placed eight or ten inches from the light. I use the developers recommended by the makers. A Velox print shows the image in ten seconds, and is fully developed in one minute. Dekko begins to appear in half the time, but takes a few seconds longer to full development. I used to try to force underexposed prints and to save overexposed ones; but the only sure way (and it is an easy one) is to keep the exposure right.—E. W. G.

Photography is like the ever-useful horse, in that it is constantly threatened with extinction, and yet contrives to thrive through it all. Some old-liners are forever wailing because old, one-time profitable fashions are dead. For every door which closes another opens, and before one fashion dies another is born; and, in spite of the denial of pessimists, the scope of photography broadens every day.

MILTON WAIDE'S "ONE-MAN" METHOD.

SOME years ago Mr. Milton Waide, then President of the Illinois Photographers' Association, called at our office during a visit to New York. Among other things talked of was a novel method of business —the one-man method—from which Mr. Waide expected great things. Briefly the "one-man" method means that the photographer who makes the portrait negative should himself carry through all the after processes to the mounting and finishing of the print. In this way, of course, the portrait and its making is confined to the worker best informed concerning the subject, and one would naturally expect better results, in the hands of a skilled workman, than where the portrait is the product of many minds and hands. Mr. Waide has pursued his method in New York, his studio being located in a fashionable part of Fifth Avenue. Latterly his success has awakened interest in his method among photographers, and there have been many inquiries for details and particulars. In response to these calls Mr. Waide has prepared a booklet entitled *Milton Waide's One-Man Method in Photography*, published by the author at $1, wherein he fully and unreservedly gives his plans, methods, and working formulæ. Apart from its purpose the book is extremely interesting and offers many useful suggestions from the author's wide experience.

We give herewith a page or two from advance sheets of the book, which, we understand, will be ready for delivery about the time this appears.

From the Introduction.

"It is a great advantage that the patron, when making appointment and again in the operating room, meets the one man who is to make the portraits.

"The commercial suggestion by the presence of a saleswoman and the strangeness when first meeting the operator on day of sittings are eliminated.

"Style, size, and price of order are seldom decided before sittings are made, and only after proofs are submitted.

"Such decision is evaded successfully until proofs are accepted by suggestions to patron as follows:

"My prices for photographs, known as cabinet size, vary from $6 to $15 for the dozen, the cost being according to the number ordered and the style of get up, mounting or embellishment of the portrait, and can be determined by you after proofs are accepted. You are not expected or desired to decide on the number or priced style you want until you see what you get.

"I would suggest that you make an appointment, wear, or bring with you what apparel you would like to try, and I will make various plates until I feel certain no resittings will be desired.

"Proofs of all the plates made will be submitted, the negatives I consider the best being retouched as though for finished pictures, so that if a proof is satisfactory no variation will be made in its finishing, and you may then order from finished samples the priced work you desire, and the number to be printed.

"Almost invariably this is the understanding when appointed day and hour for sittings are made.

"Unless suggested by the patron, no mention is made of making plates of larger size than those known as cabinets, yet no exception is made to the rule of making larger plates of every subject, an 8 x 10, a 10 x 12 or 11 x 14, often all three, and 95 per cent. of the author's orders have included prints from one or more larger negatives.

"Upon leaving the studio, after making appointment, the writer's booklet is presented, with a request to read it between then and the day of sitting."

About Proofs.

"The subject of proofs plays a most important part in the system, so is here considered further.

"Every developed negative is proofed and the proofs carefully inspected to determine the ones most likely to be satisfactory.

"These are carefully retouched, as completely as though already ordered from, even to the etching to improve figures,

draperies, etc., so carefully and thoroughly that no cause for criticism can be found. The battle is won if the patron can find no fault in a proof. If a defect is once noted, alteration will never entirely overcome the first prejudice, the subject always retaining the first impression to a great extent; while if defects are corrected before proofs are judged, there is nothing but admiration for the photographer who obtains for the subject at first attempt what no other has ever succeeded in producing —a proof that is perfectly satisfactory in every detail. Right there the picture man's reputation soars 100 per cent. For obvious reasons, particular endeavor is made to make the proofs from the large negatives very attractive to the sitter, for therein is the secret of the paying orders.

"The large proofs become the lever to raise the amount of the order, and if sufficiently attractive to the customer, will do it every time.

"Where originally but a cabinet order was intended, the beautifully executed larger proofs will cause a customer to strain a point to order from them. Family and friends, having seen them, will not be contented with the small ones, and you may count on an order for one or more of the larger prints at a good price.

"Both the retouched and unretouched proofs are mailed to the customer after the author's opinion of them has been placed on the back of each, with instructions to keep them from strong light and bring to the studio all submitted proofs when calling to give order."

One of Many Suggestions.

"A very attractive portraiture, called by the writer 'Art Deckle' (cabinet size heads or figures), and which readily bring $15 per dozen, is made as follows:

"Into an 8 x 10 frame is put a clean white glass. On this is laid a piece of white tissue paper such as is used for vignetting. On this a black paper mask, with opening a trifle smaller than your metal oval trimmer, is placed. On top is put another clean 8 x 10 glass. Then four pieces of very thick cardboard are arranged around the glass to build up higher, and on this is put another 8 x 10 glass. Then the negative is adjusted on this, which brings it far enough from the mask opening to produce a very much blended edge.

"For the print, an 8 x 10 piece of double weight rough surface paper (requiring no mounting) is used.

"When the print is dry and made to lay flat (flattening by the process later described in this treatise) the metal form (which is somewhat larger than the printed margin) is laid on top of the print, and after spacing it properly, and while holding it in place upon the print, they are turned over together so that back of print is up and metal form beneath. Now with the thumb press the paper around the oval, enough to show its form as a guide, and then, using a round, smooth tool (the writer obtains result with the round end of the trimmer handle), and with an even rotary motion the paper is depressed until the print has a beautiful convex effect, which, in conjunction with the very blended edge, is charmingly attractive and has the apparent softness of a porcelain.

"The edges of the 8 x 10 print are deckled (as later described), the name is penciled diagonally on the white margin, the portrait is further improved by the use of the folder (also described later on), matched shade of ribbon (held in place by gold seal of the patron's initial letter) surrounding it and maker's name is added to the cover. The same method of procedure is used for different sized negatives up to 11 x 14—an 18 x 22 heavyweight paper being necessary for the latter."

The book is one which the progressive photographer will welcome as giving profitable hints on the conduct and management of business. Copies can be obtained from the author, 164 Fifth Avenue, New York.

The Cooke Portrait Lens, a modern objective with a very high European reputation, will shortly be placed on the American market by Taylor, Taylor & Hobson, Ltd., St. James Building, New York.

Da Vinci has made the centre the point of interest in his picture of the "Last Supper" because the subject demanded it.

The point of sight may be shifted right or left or raised high or low, as needs of sky, middle distance, or ground may demand.—JOHN BARTLETT.

CARBON PRINTS ON METALLIC SUPPORTS, WITH BRIGHT AND GRAINED SURFACES.

BY A. J. JARMAN.

GENERALLY, when the photographer desires to produce carbon prints upon a metallic support, especially upon a bright and highly polished surface, he employs a preliminary coating of normal collodion, this coating being relied upon as a substratum or go-between with the metal plate and the carbon print. This is especially so with a plate of copper that has been coated with silver and highly polished. For the production of carbon portraits upon bright copper or highly polished silver surfaces, the use of collodion is not necessary. Carbon prints upon metal surfaces are invariably produced by single transfer, so that the developing is made direct upon the metal. If the plate should be made of brass, nickel-plated copper, or a bronze of almost any description, then it is advisable to use a preliminary coating of collodion. This is necessary because the chromic acid which forms the base of the bichromate of potash (used to sensitize the tissue) attacks the zinc contained in brass, or the nickel coating on copper, or any nickel alloy, combining with the nickel or zinc and liberating copper in a free state, giving spots and patches of copper upon the surface. Collodion being an inert body acts as a neutral layer upon the surface of the alloy.

The preparation of the carbon tissue does not differ in any way from the usual practice. A very good sensitizing solution for the carbon tissue to be used may be prepared as follows:

Bichromate of Potash (c. p.)	2 ounces.
Distilled Water	50 "
Glycerine	15 drops.
Salicylic Acid (dissolved in hot water)	15 grains.
Carbonate of Ammonia	40 "

When the above are completely dissolved, filter the solution through absorbent cotton and sensitize the tissue by immersing it for three minutes. Squeegee the tissue down upon a clean sheet of glass, then suspend it to dry in a ventilated and darkened room. Having the tissue ready, it may be kept for use in a printing frame larger in size than the tissue by placing in the frame a piece of thick sheet glass covered with black paper. Put in the tissue, replace the back of the frame, and keep the tissue under pressure.

If it is desired to produce a grained surface upon, say, a plate of copper or aluminum, proceed in the following manner: Clean the copper-plate well by dipping it into and rubbing it with a small rag mop dipped in a solution of lye. This solution is made by dissolving a small quantity of potash lye, about four ounces dissolved in one quart of warm water; allow it to cool off before use. The copper-plate must be planished and polished previously. Having cleaned the plate with the potash lye, wash it well and dry. When dry, brush the back of the plate over with shellac varnish or asphaltum varnish. Allow to dry in a warm place. The plate should be handled by the edges only, the fingers not being allowed to touch the surface. The surface of the plate must now be rubbed well with a stick of charcoal, such as is used by photo-engravers. Dip the plate and charcoal into water; lay the plate upon a smooth board, inclined over a sink so that in rubbing the surface backward and forward, the surface grinding drops into the sink. The graining is produced by immersing the well-cleaned copper-plate into a mixture of

Nitric Acid	1 ounce.
Water	20 ounces.

If the graining is to be coarser, the water must be reduced to fifteen ounces.

In the course of a short time it will be seen that the surface of the copper has been attacked by the acid. Rock the tray a little, and in the course of a minute or two remove the plate, rinse it in running water, then scour the surface with a fine brass wire scratch-brush. This can be done by hand, or, if possible, use the rotary scratch-brush in a scratch-brush lathe of a silver plater. The object of the scratch-brushing is to rub down any slight burr formed by the etching of the acid. The

plate may now be washed by dipping into hot water. It will dry by its own heat.

If aluminum be employed, hydrochloric acid (muriatic acid) must be used instead of nitric, because nitric acid will not attack aluminum except at a high temperature. The proportion of hydrochloric acid may be the same, with the addition of half an ounce of common salt. This lessens the intense action of the acid. The scratch brushing must be resorted to as before, rinsing the plate, dipping into hot water, and drying.

Assuming now that a carbon print has been produced upon the tissue in the usual way, all that is necessary will be to take the copper, silvered, or aluminum plate, and dip it in the lye. Rub lightly with a soft cotton mop, rinse in clean water, and as quickly as possible soak the exposed tissue. Dip the tissue and metal plate into a syrup composed of

White Granulated Sugar . .	1 pound.
Water	1 pint.

This solution must be used only in a cold condition.

Place the soaked tissue and plate together; cover with a piece of india-rubber cloth, glazed side uppermost; place upon a level surface. Now apply a squeegee, lightly at first, then gradually increase the pressure at every stroke, not rapidly, but with a slow, heavy pressure. If several plates are used, some bright, some grained, the treatment is the same. Allow the plates to stand for fifteen or twenty minutes before developing. At the end of that period, place them in cold water, allow to soak for a minute or two, then transfer them to a larger tray containing warm water. Rock the tray so as to get rid of the air-bubbles on the surface. Take the first tray, half fill it with water of a somewhat higher temperature, take one of the metal plates out of the warm water, immerse it, then carefully lift the tissue from one corner. All that will be necessary now will be to throw the warm water over the surface of the plate with the right hand while holding the plate in a sloping position with the left hand. In a very short time the print will be fully developed. Wash it by dipping into clean, cold water; then immerse it in an alum bath compound of

Common Alum . . .	2 ounces.
Water	100 "

The plate must remain in this bath for not more than five minutes, because the film should not be hardened too much.

Proceed in the same way with the other plates, and after the alum bath wash them by laying them in clean water from tray to tray, giving five minutes time to soak, so as to completely remove the alum. They then may be placed in a clean rack to dry.

Carbon prints produced upon bright silvered plates have very much the same effect as daguerreotypes with this exception, the portrait may be seen at any angle, hence they have often been called daguerreo-carbons. Prints produced upon aluminum have an exquisite velvety effect, being at the same time absolutely permanent.

NEW METHODS AND FORMULÆ.

Tinted Papers for Carbon Prints. Now and again the photographer in search of novel effects for his display window, or to infuse a little life into everyday business, attempts prints in colors. We recall a display window filled with blue prints, and on another occasion with platinotypes toned to various colors with uranium or mercury. They were very effective, and suggest that the possibilities for color in the photograph are wider than is generally supposed.

Herr Richard Blochmann, writing in the *Photographische Rundschau*, calls attention to the great variety of effects obtainable by using suitably colored transfer papers, and he remarks that although a great variety of tone is obtainable as far as tissues are concerned, there is little choice in the case of commercial transfer papers, but fortunately it is easy enough for the photographer to prepare transfer paper of any required tint. Blochmann has made many experiments with the view of finding the most convenient method of working, and he adopts the following method: Fine white gelatine, 4 grammes, is cut into shreds

and dissolved by heat in 100 c.c. of water, after which 100 c.c. of saturated alum solution is added, and this solution is colored to the required extent with a suitable coal-tar color, or a mixture of colors. The coloring materials specially recommended are chrysoidine for yellow, safranine for red, methyl violet, and malachite green. The first mentioned colors, if mixed, give all the manifold tints of orange, while the last two give the various shades of blue. To prepare the basis for transfer, a sheet of Whatman paper is laid on a sheet of glass which is inclined forward desk-fashion, and the warm mixture is smoothly worked on with a broad brush, when the paper is pinned up in a warm place to dry. When dry, the sheet is mordanted, or tanned, in order to fix the color; a 3 to 4 per cent. solution of tannin being used. The paper is allowed to remain in this solution for five or ten minutes, after which it is washed and dried, when it is ready for use. This method not only allows of the widest possible range in tint, but also makes it easy to study local requirements, such, for example, as flesh tints or draperies in a portrait.

CHROMATYPE. Mr. J. R. Gotz recently gave a demonstration of the Chromatype process before the members of the Manchester Photographic Society. This process is really a modification of the carbon process, but the necessity for transferring and retransferring is done away with, thus simplifying matters considerably. The paper is sensitized in a potassium bath, and exposed under a negative in just the same manner as in the carbon process, and the same precautions are necessary with regard to the exposure, as the paper is coated with a pigment which renders it essential to adopt means to judge the exposure. The examples which Mr. Gotz had with him to illustrate the process had already been exposed, and consequently it only remained for him to explain fully the process of developing. In the first instance, it is necessary to wash out the bichromate of potassium as soon as possible after printing so as to keep the print exactly the same as when exposed, otherwise action might be going on which would bring it into the condition of being over-exposed. After giving this advice, Mr. Gotz placed one of the prints into a bath of lukewarm water face upward, calling attention at the same time to the importance of not touching the pigmented side of the paper. After allowing the print to remain in the bath for a few minutes he transferred it to a sloping board with splash edges, the board itself being constructed with slight vents to allow for expansion under damp. The lower end of the board was fixed to a zinc bath containing the developer, the principal composition of which is water heated by means of a Bunsen burner placed underneath—varying from 95 to 140° F., according to requirements, and willow or other fine sawdust, which, he stated, requires careful mixing with the water, along with a little carbonate of potash if an accelerator be wanted. The mode of bringing out the print is to lave the developer over the paper, which, by the way, must not be allowed to have any air spaces underneath, as this would result in uneven developing. During the laving process the sawdust which is in suspension in the developer removes the pigment in varying degrees from the paper in consequence of the chemical action which has taken place during the process of printing. The lecturer remarked that it is necessary to take care that the developing is carried out evenly, the image taking a few minutes to appear, and the high lights should come very gradually if a good print is to be produced. It is sometimes necessary to turn the print round on the board, as, of course, more of the sawdust passes over the lower than the upper portion. To finish a picture off, all that is necessary is, in the first instance, to wash it over with cold water, and then take it from the developing board and place it in a bath of cold water, when, by means of a soft brush, the high lights may be stippled slightly, according to requirements. In some instances Mr. Gotz appeared to transfer the pigment from one portion of his picture to another. During this operation it is important to keep the print under water.

SHADING THE LENS. It used to be the fashion of photographic writers to pronounce a solemn warning against making exposures in the direction of the sun—that is, turning the lens of the camera so as to face the sun. None the less, as with so

many of the other prejudices of our photographic forefathers, this idea now seems to have gone completely to the wall. Very highly artistic effects are often reached by the adoption of this very plan, the only precaution that is necessary to prevent trouble by the production of a flarespot on the plate being to screen the lens by drawing out the hood or otherwise.

Comparatively few modern lenses are provided with a hood; but this need not be a source of embarrassment. All that is necessary in most cases is to hold the hand or a focusing cloth over the top of the lens, so as to shut out the intrusive "direct ray" of our luminary, and enable the scheme of lighting to be accurately interpreted on the plate, while excluding the interference of accidental reflections caused by sunlight impinging on the surface of the lens. Nicholson's lens shade, obtainable from most dealers, is a more effective aid than the hand and costs but a trifle.

TIME DEVELOPMENT. A battle royal is now raging in photographic circles as to the desirability or otherwise of "time development," which, I presume, most of my readers understand to be the regulation of the whole period of development by observing the time required for the first appearance of the image. I prefer the title "factorial development," as the total time during which the plate is to be kept in the developer is determined not only by the observation of how long the image takes to appear, but also by the application of a factor to this time, which factor varies with the developer. Thus, if the image appears in three minutes with a developer of factor four, the total time of development is twelve minutes. Mr. Alfred Watkins, to whom this system is due, has certainly proved its immense advantages in a great number of ways, and I am inclined to think that the whole trouble with those who are now questioning its advantages, comes to this: that the people who have acquired the skill to regulate the density of their plates, or to decide when to remove them from the developer, can afford to dispense with the aid of a factor, and naturally require an immense amount of persuasion before they can appreciate the advantages of the method to those who are not similarly gifted.

EDITOR'S TABLE.

UNLESS we are mistaken the most complete list of photographic apparatus and material yet offered to American photographers is the 1903 catalogue of GEORGE MURPHY, Inc., 57 East Ninth Street, New York. There are bulkier lists and catalogues more attractively illustrated, and there are others which add much purely technical instruction to the catalogue feature. But for a photographic catalogue, pure and simple, comprising practical helps and conveniences, tools of the trade, etc., the Murphy catalogue, is altogether satisfactory and extremely valuable as a reference-book. The descriptions are plainly worded and to the point; the illustrations are well arranged, and the book is printed on thin paper of good quality, so that unnecessary bulk is avoided and a handy volume obtained. Our readers can obtain a copy of this catalogue by sending six cents for postage and mentioning this MAGAZINE. The slight cost here involved will be amply repaid by the mass of information which the book presents in its 288 pages.

TEACHING PHOTOGRAPHY BY MAIL. Doubtless many of our professional readers will be inclined to smile at the idea of successfully teaching practical photography by mail. And yet a paper on this subject, read at the Pennsylvania Convention, at Harrisburg, last month, by J. B. SCHRIEVER, very clearly demonstrated the practical nature of the mail instruction given by the American School of Art and Photography, Scranton, Pa., of which Mr. SCHRIEVER is President. A brief extract from the paper explains the method. We quote:

"To give you an idea how simple the instructions are, I will tell you how we proceed to teach the different lightings. First, knowing the circumstances under which you perform your work, we supply you a lesson on Plain Lighting. This lesson contains several pages of manuscript, explaining most thoroughly how you must proceed to perform your lesson. We treat students as though they knew nothing about the rules governing the different lightings. We contend that it is the little things which bother the ambitious worker most. In addition to the manuscript, we supply you illustrations setting forth this particular lighting. We show you in the illustration, where the subject is located under the light, the location of the camera,

the reflecting and diffusing screens and also the arrangement of the curtains. Fearing that even this plain illustration will not make the lesson thoroughly understood, we go one step farther. We supply you with a floor plan, locating the subject, camera, accessories by measurement in feet and inches. You note the angle of light as it falls upon the sitter. By following the instructions to the letter, you cannot fail to produce the results which you find in the third illustration. It is a portrait made under these conditions exactly.

"We ask you to make three exposures of this subject. One we require you to develop, according to our instructions, and with the private formula which we supply you. This negative and your second plate undeveloped, you send to the school for criticism. We develop this plate and return both to you, with carefully prepared criticism, stating where and why you have failed and how you can overcome them. At this time we ask you to develop your third plate, which you have retained until you have received our criticisms. When this plate is developed, you will have in your possession three plates. One developed by yourself, a second one developed by us and the third you have developed after receiving criticisms."

The effectiveness of this sort of teaching cannot be denied, and when it is remembered that Mr. SCHRIEVER and his associates are skilled workers in photography, it will be seen that the American School of Art and Photography, at Scranton, Pa., is doing a praiseworthy and commendable work for its correspondents. Photographers desiring special courses of instruction will do well to write to President SCHRIEVER for his advice and help.

A SPECIAL opportunity for photographers interested in Pictorial Photography is offered by TENNANT & WARD, of New York, in an announcement just received. This offer comprises the first four numbers of *Camera Work*, some thirty photogravures and many fine half-tones from photographs by KASEBIER, WHITE, STIEGLITZ, STIECHEN, and other leaders of the new school, at the special price of $10 for the set. As these four numbers cannot be obtained elsewhere at less than $15, the opportunity for study is one which should not be overlooked.

AN attractive feature of the forthcoming National Convention at Indianapolis, August 5, 6, 7, will be the special display of portrait lenses made by the BAUSCH & LAMB OPTICAL CO., of Rochester, N. Y. These include four distinct types of portrait objectives, and the performance of each type will be practically demonstrated by a collection of portraits made with the various lenses. The exhibit will be the first one on the main floor of the Convention Hall and will undoubtedly draw considerable attention.

A VISITOR to the HAMMER DRY-PLATE CO.'S factory at St. Louis reports his impressions in *Photo. Straws* as follows:

"It is difficult to explain why St. Louis is the home of the Dry Plate industry in America. Many ascribe this result to St. Louis water; the climatic condition is another reason assigned; but whatever the cause may be the indisputable fact remains that St. Louis is the home of the Dry Plate. If we may be allowed to express our views, we will advance the theory that it is due entirely to personal initiative and efforts. This is surely appreciated after visiting the Hammer Dry Plate factory and similar institutions. The cleanliness, the order and arrangement of every small detail in such a manner as to save time and material, the high quality of the glass, gelatine and other ingredients used, and what is last, but not least, the character and efficiency of the men employed speak for themselves. One is everywhere impressed with the sense of responsibility, wise economy, and progressiveness. The building up of this model business, however, was not an easy task; it had its dark periods, and only after the greatest perseverance and closest attention to detail was a point reached when the business showed a profit. The success is due largely to Mr. HAMMER'S personal efforts. Mr. HAMMER is a very modest gentleman, and he does not seek notoriety, but without seeming to enroach upon the trade of rival factories, he has brought the Hammer plates to a leading position in the markets of the world. Mr. HAMMER was born at Wurtemberg, Germany, received his school education there, came to this country in 1854 and followed photography as an occupation. He opened a studio in St. Louis in 1865, and successfully conducted it until 1890, when he began the manufacture of dry plates and organized the HAMMER DRY PLATE CO."

The growth of the HAMMER DRY PLATE CO. has been steadily continuous, based upon the merit of its products. To-day the Hammer plate is used in many of our leading studios, and the yearly sales to amateurs show rapid progress.

FROM PROFESSOR DAVID J. COOK, of the Illinois College of Photography, we have received the second and third books of his work on "More Light in Negative Making." These treat respectively of "Considerations of the Negative" and the "Development of the Latent Image" in a concise and practical way. Mr. COOK tells us that the sale of these handy manuals has been larger than he expected, and that photographers are widely appreciative of their value. The price of the complete work (five sections) is $2; separate sections as published, 50 cents. Orders should be sent direct to the author.

MR. J. F. RYDER'S charming volume, *Voigtländer and I*, reviewed in these pages a few months ago, con-

tinues to give pleasure to new readers. Several professionals, after purchasing the book, have expressed their surprise at the practical value of its photographic instruction. *Voigtländer and I* is a story book—the interesting record of an interesting life spent behind the camera—but it also gives many helpful and useful hints which can be applied in everyday work. We are glad to note its popularity.

THE Keystone Electric Photographic Printing Machine referred to in earlier issues is fast gaining ground among progressive photographers. Those who are not acquainted with this time and expense-saving machine should send for the illustrated circular just published by the manufacturers. Address the Keystone Blue Paper Co., 910 Filbert Street, Philadelphia.

THE new *Montauk Camera Book*, published by G. GENNERT, 24 East Thirteenth Street, New York, for free distribution is an attractive pamphlet describing the Montauks for 1903: Golf Montauks, Gray day Montauks, and the new Speedway Camera. To those who seek a high-grade instrument for serious outdoor work the Speedway should appeal with peculiar force. It is a compact collapsible camera of fine construction, fitted with a collinear lens, series II. *f*/5.6 and a focal plane shutter. Those interested should obtain the Montauk booklet, wherein the many advantageous features of the Speedway and other Montauk cameras are set forth and illustrated.

THE CAMERA PUBLISHING CO., 120 South Seventh Street, Philadelphia, offers a series of attractive competitions with cash prizes and medals, of which particulars can be had on application. This bright and attractive journal, edited by FRANK V. CHAMBERS and JOHN BARTLETT, should prove suggestive and profitable to many professionals.

NOTHING so clearly demonstrates the enterprise and prosperity of a business house as the appearance of its general catalogue. From this view-point the 1903 catalogue of BURKE & JAMES, Chicago and New York, plainly shows that this progressive firm still maintains its lead in the introduction of practical apparatus and material for photographic use. In its 216 pages, well printed, concisely arranged and illustrated, may be found a veritable feast of new specialties introduced for the help of professional and amateur photographers. Messrs. BURKE & JAMES are not only manufacturers in a large way, controlling a splendid list of exclusive designs in cameras, studio conveniences, chemical preparations, etc., but they are also the Western agents for many standard specialties, such as electrose trays, Spurr's specialties, Prosch shutters and flash lamps, Century and R. O. C. cameras, etc. A copy of the new catalogue may be had by mentioning this MAGAZINE, and no photographer should overlook its usefulness as a handy reference to the market. Eastern readers should address BURKE & JAMES, at 18 East Seventeenth Street, New York; the main office and factory being, as before, 118–132 West Jackson Boulevard, Chicago.

PROSCHLITE PHOTOGRAPHY. This is what flashlight photography is called when it follows the Prosch methods and uses the Prosch apparatus. This company is about to put on the market new sizes in the Proschlite Magnesium Flash Lamps, thus making a full series ranging from the Proschlite I., the smallest one, which sells for $1.25, up to the Proschlite VII., the largest professional magnesium flash lamp ever made and which sells for $25. The principle used in the construction of the Proschlite lamps is entirely different from anything on the market, and they promise to revolutionize flashlight work. Flashlights without smoke is an important part of the new method of Proschlite photography. The PROSCH MANUFACTURING CO. has been experimenting along this line for several years, and has at last perfected its inventions and covered them with patents. This new method is described and illustrated in some new circulars now almost ready for distribution. For copies, address the PROSCH MANUFACTURING CO., 151 West Eighteenth Street, New York.

THE South Australian Photographic Society, Adelaide, S. A., invites exhibits from American photographers for its annual exhibition, to be held October 8 to 15th. Section II. of the exhibition is open to all photographers and comprises figure studies, architectural work, etc., a silver medal being offered for the best exhibit in each separate class. Plain mounted prints should be sent, postpaid, to the Secretary, addressed as above.

THE professional who is interested in the profitable possibilities of bromide enlargements should send to BURKE & JAMES, of Chicago, for particulars of their new Ideal Lantern, which is fitted with a student's lamp in which gasoline may be used. This lamp is equipped with a vapor incandescent attachment which gives an exceedingly bright light, meeting all requirements for professional enlarging. The lamp can be used separately as a student lamp if desired.

Another excellent specialty which is introduced by BURKE & JAMES is the "Lindo" card mount, a very handsome professional card. It is made of the best stock of heavy grade with matched bevelled edges, and the surface of the card is finished in water-silk effect, making a handsome and pleasing mount. The centre is smooth with a plain and embossed border in strong relief around the opening, which may be had either oval or square. The colors are seal brown and dead black.

FROM A PLATINOTYPE PORTRAIT
By C. Durand Chapman, Newark, N. J.

WILSON'S PHOTOGRAPHIC MAGAZINE.

FOUNDED BY EDWARD L. WILSON.
L. W. WILSON, EDITOR.

VOL. XL. AUGUST, 1903. No. 560.

THE NATIONAL CONVENTION,

Indianapolis, August 4 to 7, inclusive, 1903.

(OFFICIALLY REPORTED BY DOUGLAS A. BROWN.)

THE Twenty-third Annual Convention of the Photographers' Association of America was held in the Auditorium, Das Deutsche Haus, Indianapolis, Indiana, August 4th to 7th, inclusive, under the presidency of Mr. J. George Nussbaumer, Buffalo, N. Y.

The following is the official stenographic report of the proceedings, complete in every detail:

FIRST DAY—MORNING SESSION.

The convention was called to order at 10.30 A.M., President Nussbaumer in the Chair, supported by Secretary Holloway.

President Nussbaumer: We will now come to order. I declare the Thirty-third Annual Convention of the Photographers' Association of America duly open for business. The Past Presidents of the Association are cordially invited to a seat on the platform. [In accordance with this invitation Past Presidents W. H. Potter, Indianapolis; R. P. Bellsmith, Cincinnati, and James F. Ryder, Cleveland, now took seats upon the stage. Their advent was greeted with applause.]

President Nussbaumer: The first order of business this morning is the address of welcome by Governor Winfield T. Durbin. Unfortunately, Governor Durbin has been called away by important business, so that he is unable to be present, but he has sent a letter to us, expressing his welcome, which will be read by Past President Potter, who also represents the photographers of Indiana. (Applause.)

Address of Welcome by Past President W. H. Potter.

MR. PRESIDENT, LADIES AND GENTLEMEN:

Governor Durbin has honored me by requesting me to read to you, with an apology for his unavoidable absence, his letter, as follows:

PRESIDENT NATIONAL PHOTOGRAPHERS' ASSOCIATION:

MY DEAR SIR: For more than a year I have been looking forward with pleasurable anticipation to this opportunity to meet and greet the photographers of America through their representatives here assembled. Within the past few hours an urgent call of official duty has rendered it impossible for me to be with you during the hour set for my presence here. Since the days of the daguerreotype I have been hoping that the day would yet arrive when I might, without effort, "look pleasant" in the presence of a photographer. The time is now here when an effort would have been necessary to look otherwise than amiable, for unusually delightful is the duty of welcoming to Hoosier hospitality so handsome and intelligent an assemblage, representing the skill and culture of a craft which is doing the people of this country so great a service by making them so much more interesting and beautiful than they really are. (Applause.)

The love of pictures is one of the primitive passions of men, developing with civilization. From the pictured rocks of our own Mississippi Valley to the high-art photography of to-day is a long journey, but all along the way is found abundant evidence that there never has been cessation of human interest in the picture—especially in one's own picture. Even in our new civilization there are evidences of early interest in permanent records of personal appearance in

the family album which adorned the old-fashioned parlor of our younger days.

Certain it is that with the development of photography there has been not only an increasing popular interest in its various forms, but a superior order of intelligence and skill has been developed and recruited among those engaged in photography, until it has become, in fact as well as in name, an art. The profusion with which the popular magazines of to-day are illustrated is ample evidence of the growing popularity of the photograph, and at the same time of the surprising development in the skill and artistic sense of the photographer. It is encouraging to some of us to realize that as the man or woman behind the camera becomes more skilful, the man or woman in front of it is able to make an impression on the negative that is altogether more pleasing.

I will not longer seek to occupy your time; the important business of a great convention is before you. I want to indulge the hope, however, that when you leave this beautiful capital of a great and interesting State, you will carry with you impressions the most delightful, photographed so deeply in your memories that Time cannot efface the picture. I know the photographers of Indiana well enough to be absolutely certain that there will be nothing lacking in their efforts to this end.

Again giving you welcome, and expressing the sincere regret I feel because of my enforced absence, and indulging the hope that before your convention closes I may have the opportunity to mingle with you, I am,

Very truly yours,

(Applause.) WINFIELD T. DURBIN.

After reading Governor Durbin's letter, Past President Potter spoke as follows:

I only received the foregoing letter a few minutes ago, so that, perhaps, I did not get into the full swing of it in the reading, but you will appreciate what Governor Durbin has said, and you will all feel that he is inspired by a very kindly feeling toward our fraternity.

Now I am asked to say something in behalf of Indiana. I must confess that I am not an Indianaian, but an Ohioan (applause), but I will say this: that no State in the Union contains a braver and more heroic people, men more devoted to our Union than the State of Indiana (applause), and surely you can receive no better welcome than from the brave and the true and the tender, as her people are. The welcome of the brave is always sincere and hearty, and Indiana and Indianapolis welcome you with all the sincerity of their intrepid soldiery imbued by the most intrepid patriotism. Among this brave and true people our brother photographers hold rank equal with all other classes of business, and in their behalf I greet and welcome you to the city of Indianapolis and to the State. You have the freedom of our city. Ask what you will, and it is yours. (Applause.)

President Nussbaumer: Secretary Holloway, I believe, has some communications.

The Secretary read the following:

GERMANTOWN, PHILADELPHIA,
August 1, 1903.

C. R. REEVES, First Vice-President, P. A. of A.

DEAR SIR: I am in receipt of the copy of the *Association Review* you have kindly sent me, and for which I will ask you to please accept my thanks. This publication will redound to the credit of the Association, the members of which are under obligations to the officers for the ability and care manifested in the production of this unique work.

With my best wishes that the twenty-third annual gathering will in all particulars prove to be pleasant and profitable to those permitted to be present, I am, with kind regards,

Very truly yours,

EDWARD COPE.

President Nussbaumer: The next order of business is "Reports of Committees." Are there any committees to report this morning?

No committees being prepared to report, the Chair recognized Mr. R. P. Bellsmith, of Cincinnati.

Mr. Bellsmith: Mr. President, Ladies and Gentlemen: During the year which has passed since last we met, the hand of death has been stretched out and found its victims among our ranks. We have lost more than one of the good old war-horses of photography. I think, Mr. President, that we owe the duty to ourselves to take some cognizance of the death of, at least, two of our members. I refer to Mr. Fitz W. Guerin, of St. Louis, and Mr. Edward L. Wilson, of New York. The journalistic work of the latter has been a power for good in advancing the highest interest of photography.

It is said that Alexander, after a great victory, ere the banquet began, cried out: "Are all here who fought at Isos?" Clytos, his general, replied: "All, oh, King, save those who fell." "Then," said Alexander: "All are here, for the spirit of the good and the brave are ever with us."

Our brothers, Guerin and Wilson, are gone, but their spirit is with us, and may it remain and dominate us!

Mr. President, I move that a committee

be appointed to draft suitable resolutions in memory of our departed brothers.

The motion was seconded and carried by unanimous vote.

President Nussbaumer: I will appoint as members of the Obituary Committee the following: Messrs. W. I. Scandlin, R. P. Bellsmith, George B. Sperry.

I will appoint as Nominating Committee, to nominate officers for the coming year, Messrs. James F. Ryder, Cleveland; Frank Medlar, Spencer, Iowa; J. M. Bandtel, Milwaukee; H. G. Schwarzer, Brooklyn, N. Y.; William Stephenson, Atlanta, Ga.

Mr. F. M. Steadman, of Puebla, Mexico, a gentleman who is interested in home portraiture, has a proposition that he would like to present to the Association. We will entertain his proposition, and he will now for a few minutes address us.

Address by Mr. F. M. Steadman.

MR. PRESIDENT AND MEMBERS OF THE P. A. OF A:

For the last six years I have been endeavoring to unify the different photographic values in such a way that we may express them by simple numerals as we express other known and applied forces of nature. For instance, gravitation is a natural force, and we have established units for its measurement in the grain and gramme. For distances we have a system of linear measurement. We have also measures of surface area and measures of volume. We have also established a unit of measurement of temperature.

Now the pre-eminent force to which we give attention, and which we daily employ in photographic manipulation, is the actinic force of light; and I believe that there is nothing that will dignify photography so much as a successful effort on our part to provide a unit of measurement for this force. This body may well go down in history with sufficient reason for its existence if it shall successfully attack and solve this problem. I believe that nothing else will redound as much to our credit as an Association.

There is an impression prevailing in some quarters that the establishment of such a unit of measurement of actinic force would in some way restrict the freedom of artistic photographic production, but surely just the contrary is the case.

In presenting my views on this subject I met with opposition from one gentleman, who said: "If a physician writes a prescription and gives it to his patient, who takes it to a druggist to be filled, it is not necessary that the druggist should understand the diagnosis of the disease for which the physician wrote the prescription." I replied, "That is true, but you must admit that the druggist must have units of volume and of weight in order to properly compound and measure the several parts of the prescription." I contend, therefore, that if we provide a unit of measurement of actinic force we will advance our art to the dignity of mathematical accuracy, and we will be prepared to describe in exact terms the actinic intensity of any surface in nature.

Appreciating deeply, as I do, the importance of this matter, I will respectfully ask that you make a reference of the subject to a special committee, so that I may place it properly before them in order that they may report to you the advisability of further action.

I thank you very much. (Applause.)

President Nussbaumer: The Chair will recognize a motion in furtherance of the suggestion of the gentleman.

Mr. Hearn: I move that such committee be appointed to investigate and report upon Mr. Steadman's views on the subject of a unit of measure of actinic force. (Carried.)

President Nussbaumer: I will appoint on that committee Messrs. Frank R. Barrows, Neal Walden, A. T. Procter, W. H. Moses, Alfred Holden, and F. Dundas Todd.

I will appoint as Committee on Resolutions Messrs. J. M. Bandtel, Chairman; W. H. Potter, and C. W. Hearn.

The next business on our programme is a talk by Mr. W. I. Scandlin, of New York. Subject, "Can the business conditions of the average photographic studio be improved, and how?"

Address by W. I. Scandlin.

MR. PRESIDENT, LADIES AND GENTLEMEN:

I realize that in trying to speak about the subject appointed, I am up against a stiff proposition. I trust you will not for a moment think that I am posing as one who thinks he knows it all, but as one who believes he has ideas that perhaps may not have occurred to all of you in the past. I have simply collated here a number of facts, theories, and suggestions, the result of a good deal of reading and study, and of a more or less intimate acquaintance with photography from the inside and the outside.

These views I purpose to present to you simply as a sketch or suggestion of some possible methods by which a good business may be improved perhaps and a poor business made better. The matter of putting into shape a great variety of suggestions of this kind is not an easy one, and it would, I think, be impossible for one to put into shape any considerable number of such suggestions that have not already appeared in one form or another. I have simply collated and tried to give to them logical sequence. If among them any of us may find a suggestion or suggestions of value, my purpose will be accomplished.

In taking up my subject, I shall base my talk this afternoon upon *two assumptions:* first, that *business conditions exist,* and, second, *that improvement in them is desirable and possible.* This reminds me of the story of a certain fakir who advertised in an agricultural paper that for one dollar he would instruct farmers how to raise turnips quickly and surely. On receipt of the money, each farmer was told to grasp the top of the turnip firmly and to pull hard.

In this case, as in my own, the advertiser started out with two assumptions: first, that there were turnips, and, second, that they were to to be raised. Unlike the fakir, however, my advice and suggestions, if carried out, will involve much more serious labor than grasping the top and pulling. We shall have to get a good deal closer to the root of things, sterilize and fertilize the soil, and prune away the dead wood before we shall raise our ideal crop of photographic turnips.

Business conditions may be said to exist in photography when, broadly speaking, a gallery equipped to make photographs is set down in a community that can be made to buy them.

Specifically speaking, this definition is capable of many modifications and much enlargement. There is a great number of galleries in good locations that will never be equipped on a business basis. Starting, however, with the broad basis of a gallery equipped for making photographs, we must study all the conditions surrounding, and lay out a definite policy of work before claiming that it is established on business lines.

It is not enough to simply plant ourselves down in some community, open a gallery or studio, and start in to do anything or everything in the photographic line that may come along at haphazard. Our capital has been invested, and it therefore is requisite that we lay out our business conduct and methods in such a way as to make profits certain.

The varying conditions under which a studio must flourish or decay, the widely differing demands of different communities, and the detail incident to the successfully carrying on of a photographic business render system and policy particularly important in this field of affairs. We should, therefore, lay out a definite plan of action at the outset and decide whether the policy shall be worked out on lines of large output and low prices, or upon smaller production and a proportionate increase in value.

We should settle upon the line of work to be followed, whether new or old school. Shall we cater to the clamor for the eccentric, or educate the people about us to a higher appreciation of good photography along the old lines? A definite policy, once adopted, should be made the central point around which every business transaction groups, and the local conditions should be so moulded as to fit the policy rather than that the policy be bent and weakened to fit conditions.

Our gallery having been established in accordance with such a policy, we may next assume that business conditions do exist, and may now properly take up the question of improving them.

Mr. C. M. Hayes, of Detroit, said before the National Convention at Buffalo last year that "the test of a good business is the dollar mark." What we are all trying to do is to change the position of this mark on our bank books. We want constantly to keep nudging it off to the left of the column, as far as possible away from the decimal point. It makes little difference to us if there are no other figures than ciphers between the figure that follows it and the decimal. We want as many ciphers as we can get between.

How can we move the dollar mark up a place, from time to time? By remembering first, last, and always that the photographer must study and practise *business methods* just as much as he practises the technique of his profession. Yea, even more, for the average photographer has often a predisposition toward photography and has often a positive aversion to business.

Business elements should not absorb or swamp the artistic sensibilities, but must be present as the motive power under which, if properly directed, the artistic qualities of the studio are to be made to improve and grow in value year by year. We are never to surrender our artistic ideals, but always cater to the kind of business that will bring money returns. Photography is growing in dignity and importance year by year. Its art possibilities are only in their infancy.

One of the first duties of a good business man is to see to it that his plant is conveniently arranged and economically administered. Waste of time and energy in the accomplishment of any part of the work is as unbusinesslike as waste of money and material.

The studio, skylight, printing-rooms, and all appointments should be studied with reference to economy of labor. Situated so, the work goes logically forward step by step to completion.

Help enough should be employed to perform the necessary work promptly, but every member of the staff should have work laid out to keep him busy all the time during business hours. Idleness prompts lack of interest. The purchase of stock and supplies must be wisely conducted, and, above all, care must be taken to guard against leakage and waste. The head of a business should keep posted on new goods and apparatus as they come into market. He cannot wisely purchase them without this knowledge. He must, therefore, not only read text-books and works on technique, but should keep posted on the dealers' catalogues and lists of new goods. This is also required of him in order that he may do justice to his trade, and justify their confidence and patronage.

Set the style in photography, as the milliner or dressmaker aims to do. Establish friendly relations with the neighbor and rival across the street. Become as familiar with the contents of his showcase as with your own. Learn as much as possible of his methods, and keep fully in touch with the social and political life and movements in the community. Keen competition will stimulate business for both.

Be progressive and up-to-date. Strive to be the best man in your community in some one line, at least. If this can be effected, the field will grow of itself.

Specialize on some line of work. The present is an age of specialization. It is better to be strong in a small place than lost in a large one. But do not try to introduce a new line until you are first yourself thoroughly familiar with it. Cultivate individuality in handling sitters. Study variety in lighting, posing, etc. Master something. Never copy another man's successful style until you first know what is the secret that lies behind its success.

When we consider the rapid strides of the past few years, we realize that the man who does not attend to these things will shortly be found hobbling along behind the procession.

I believe that the studio should be made as much as possible the local art gallery of its community; a meeting place for busy shoppers to join their friends, where appointments may be made, and visitors encouraged.

Half of the rent of the average studio is in the reception room; let it be made such use of as will render it a paying part of the business, and return its full share of the rent expense. Make its surroundings attractive, and let your displays be changed frequently. We are always to treat photographs as merchandise made to order, each requiring individual treatment.

Display samples with taste and discrimination. Avoid offending sitters. Aim to hold every present customer, and to make him or her a personal advertiser for the studio, not only thus making sure of holding present trade, but winning new business.

Summer conditions for exposing, printing, etc., should be utilized and summer business especially bid for. Keep high-priced work by itself in a drawer or cabinet. This adds apparent value and individuality to it. *Do not cut prices.*

Make old negatives pay cost of storage, care, etc., in duplicate orders. There are ways in which this may be done. Keep files alive. Know what you have, and where it is. (Great applause.)

Avoid opening the studio on Sunday, not alone for moral reasons, but because six days out of the week should be enough for labor. Overworked body and brain are always at a discount.

Make skill and ability the standard of value on which prices are fixed. Time spent in learning to make good photographs should be taken into account as much as the material used. You all know the story of the prominent lawyer who was stopped by a client on the street, and asked for advice regarding a pending matter; the lawyer gave it at once, and the client passed on and was governed by it. Later when the lawyer sent in a bill for $500 the client protested that he had only detained the lawyer ten minutes, and for this he asked a fee of $500. "But," said the lawyer, "you forget that it took me twenty years of study of law-books and trial practice to render me competent to give you such advice off-hand."

The mistake is sometimes made of basing prices on cost of material and wages, plus 20 per cent. or 25 per cent. to cover incidental costs and profits. This is far too low in most cases; too many factors —weather, seasons, etc.—are overlooked. Raise quality always, but never lower prices.

Remember that photographs are in a sense luxuries; that photography is, therefore, first to feel trade depression; and that, at best, it is largely dependent upon the fluctuations of the seasons. Buyers of luxuries can usually afford to pay well. Prices are relative; $6 in one community may be better than $10 in others. Never increase an established price without some sensible advance in quality, and the setting forth of a plausible reason for the increase in price.

Study neatness, order, and system in every department of your business. Be especially watchful of your show-case or show-window, that it is scrupulously clean and as attractive as possible at all times. Remember that it is in many cases the first medium through which you are introduced to a new customer.

A neat show-case, not overcrowded, is usually better than a large window. It is difficult to fill a window with good specimens, frequently changd. Study simplicity and variety of arrangement. Small collections of choice prints well framed are better than many small prints arranged close together. If prices are listed in the show-case a small, neatly printed card of rates is best.

Utilize all parts of the plant; make everything do its share. The photographer in a suburban town must wake up and keep his trade, and, if possible, prevent its escape to the city. Branch out. Cultivate exterior and interior and "at home" photography. Catch the man with the new trotter, the ministers of your community, rising lawyers, etc. Watch commencements and school classes. New houses may be made special subjects.

Establish a framing department, that you may be placed in a position to furnish framed enlargements when desired. Cultivate the summer visitors in your neighborhood. Above all things employ tasteful stationery and accessories.

The wideawake and progressive photographer is at all times sensible of the advantages of fraternity of interest. Attend the conventions that are accessible to you, and read the magazines for the proceedings of others. He who helps his neighbor helps himself. In this view conventions aid photographers more than any one photographer can aid the conventions. Always be watchful for new ideas, which are to be found at conventions in abundance. If there is no local photographers' association in your vicinity, establish one, and, if only two photographers, get together and talk over matters.

And after all these things, what? Sit down and wait for trade to come in? Never! *Publicity! Publicity!*

In short, any gallery established in a community, if properly equipped, can command patronage. The community may by proper effort *be made to buy.*

If we do not control the situation, before we know it, unless we forestall the event, the business will be going past our doors to the studio of some new man, who, with less prestige, less technical ability, less of everything save a keen sense of business conditions and requirements, suddenly enters the field and by judicious methods of publicity captures the best business of the entire community.

I will give some practical suggestions as to how best to do this, on Friday afternoon, in my next talk.

President Nussbaumer: You need not be scared, ladies and gentlemen, at the next order of business. It is but the address of the President. It will not hurt you at all. I will be glad to have you all stay. (Applause.)

Address by President Nussbaumer.

MEMBERS OF THE P. A. OF A., LADIES AND GENTLEMEN:

With the opening of this convention another year of success and progress has been scored.

During the past few years photography has advanced and has taken its place in the art world, a place that it will hold without question as a medium of art interpretation equal to that of the painter or the sculptor, and in some respects superior to either. Many men have contributed the results of their efforts to this end, and as the years roll on new names are added to the list of skilled workers in our art. This great army of co-workers, both men and women, are ever ready to act upon the suggestions of the thinking men who labor as an advance guard with the intricate problems of art and science, and freely give the results of their research to the profession at large, whom they are developing and leading onward to higher and higher attainments. Thus our calling is constantly being elevated and photography is commanding that recognition which is its due from the world of art.

Nothing succeeds like success, and in this great work the Photographers' Association of America

seeks to be ever at the front, to lend a helping hand to every willing worker. Its aim is to improve the art and science of photography by diffusing the light of every new discovery and invention, and to stimulate among its members the greatest enthusiasm for perfection in process and in art interpretation.

Each year our gallery is hung with new triumphs, bright gems in the crown of photographic achievement. The best available talent is secured for our meetings with the design of educating our minds in art production. This educational idea is, to my mind, the central idea and the great controlling factor that should govern our conventions. It should be our constant aim, and should be a sufficient incentive to induce every photographer in this broad land to unite himself with us. It should incite him not only to attend each of our great conventions as regularly as he would his lodge or his church, and be not merely a passive recipient of benefits, but to take an active part and cheerfully contribute his share to some department of this great work. Let each one contribute his share by exhibiting in the art gallery, and by forwarding all of our aims and efforts.

The convention of 1901, rightfully named the "educational convention," was the first of the "no prize" conventions. That this was a radical departure from the policy of previous years you all know.

It having been one of the orders of business at the convention to move that $1000 be set aside for prizes to be competed for at the coming convention, the Executive Committee in deciding the policy to be followed for this convention considered that the educational features and the desire on the part of the members to elevate their profession was a sufficient incentive to attend the convention and to exhibit their work. Prize competitions tend to foster selfish ambition, and undignified struggle for supposed supremacy, in place of that higher and more generous aspiration that strives for what is noblest, truest and best, not for selfish ends, but to better the condition of our fellow-men and elevate deservedly the noble calling in which we are engaged. No other profession can have higher ideals; let us not forsake them by worshipping the false god of personal advancement at the expense of true art.

We send our children to school and to college to place before them the best and truest, and to develop in them thinking and creative minds. So our object in holding these "no prize" conventions is to give you something to awaken thought and to incite you to emulate that which is best; to display your work to others that they may follow where you lead; that you in turn may learn from your fellows, and thus the entire brotherhood be lifted up and our common calling dignified.

When asked to exhibit we have sometimes been met with the reply, "What is there in it for me?" I can but answer, "Come and see. He that seeks shall find, and to him that hath ten talents yet more shall be given." No one can attend our conventions and go away without acknowledging that he has been benefited by observation and careful study of the beautiful examples of our art on display here.

Then why not do your share willingly, to the end that all may be benefited? This is the third "no prize" convention, and I would respectfully recommend that some action be taken in this meeting definitely to decide the future policy of our conventions. I would recommend that the printed programme be kept as simple a book as possible, rather a programme than a magazine. [A common-sense suggestion, Editor W. P. M.]

I would also recommend that we co-operate with Mr. John A. Ockerson, Chief of the Department of Liberal Arts, St. Louis World's Fair, 1904, in making the exhibit of art photography in his department at the World's Fair a great and glorious success, and that we accept the recommendations and invitation extended to us by him. This invitation and recommendations I will now read to you:

St. Louis, U. S. A., July 29, 1903.

Mr. J. George Nussbaumer, President, Photographers' Association of America:

Dear Sir: Photography has made rapid strides of recent years and has emerged from the position of a mere trade and now touches, in some of its phases at least, the realm of art. While fully recognizing its commercial side, an opportunity will be given at the St. Lous World's Fair to establish its artistic side by admitting to a place among works of art such examples of art photography as may be found worthy of this distinction by the National Jury of Selection of the Department of Art.

In order to obtain the best possible results, such as will do honor to the profession and be creditable to our great Exposition, the co-operation of all photographic organizations is desired, to aid in the selection of pictures suitable for display. I, therefore, take pleasure in extending to your Association an invitation to appoint a Committee of Selection to collect such pictures from its members as may be considered proper. Also kindly appoint one member of a Committee of Review and Selection to grade the pictures that come from all sources, under the general rules attached hereto.

Your cordial co-operation and early compliance will be of great service to your associates in the field of photography and will be highly appreciated by,

Yours very truly,
J. A. Ockerson,
Chief, Department of Liberal Arts.

General Rules.

DEPARTMENT OF LIBERAL ARTS, UNIVERSAL EXPOSITION, St. Louis, 1904.

After careful consideration of the problems involved in the collection and display of photographs, the following conclusions have been reached:

1. Each society of photographers is requested to select, in such manner as may be deemed best, from photographs offered by its members for exhibit, such pictures as they consider most worthy of a place in a great Universal Exposition. The pictures so selected, together with such as may be offered by individuals not members of a photographic society, will be submitted to a committee of review and selection.

2. The following-named camera clubs and photographic societies are requested to name one person each as a member of a Committee of Review and Selection, the members so named to be certified by the officers of the respective clubs to the Chief of the Department of Liberal Arts, not later than November 1, 1903. The societies to be represented are: the Photographic Association of

America; the Photo Secession of New York; the Photographic Society of Philadelphia; the Society of Amateur Photographers of Chicago; the Boston Camera Club; the Camera Club of New York City; the California Camera Club.

3. The Committee of Review shall, under the direction of the Chief of the Liberal Arts Department, carefully examine each photograph offered, dividing them into three grades or classes and one rejected class, the grade to be marked on each picture according to merit.

4. Grade one, or the pictures deemed to be of the highest merit, shall be certified to the Chief of the Department of Liberal Arts, who shall in turn certify them to the Chief of the Department of Art, and under his direction said pictures shall be examined by the National Jury of Selection of the said Department of Art.

5. The pictures so examined by the National Jury of Selection, which shall be by them considered worthy of such distinction, shall be hung in the Art Building under the rules of the Art Department.

6. Pictures of the first grade, not admitted to the Art Palace under the above conditions, may be hung in the Photographic Section of the Liberal Arts Palace. In addition to these, there may also be hung pictures of the second grade and as many of the third grade as the space available will permit.

7. Suitable screen walls will be constructed in the Liberal Arts Palace on which pictures may be hung. The special adornment of space allotted to an exhibit must be done by and at the expense of the respective exhibitors in each case.

8. The expense of special requirements for lighting, if such be found necessary, will be prorated among the exhibitors at the established rates.

9. Each picture offered as an exhibit must be the individual work of the exhibitor and should be accompanied by the title of picture, the name and address of the exhibitor, all but the title being in a sealed envelope so that authorship will remain unknown until after the pictures have been graded by the committee. The outside of envelope to bear a design or name which shall also be entered on the back of each picture to identify ownership.

10. All pictures offered must be mounted, framed, and matted and all expenses of transportation must be fully prepaid by the exhibitor, and must be shipped at owner's risk so as to reach St. Louis not earlier than January 1 and not later than January 30, 1904. Shipping labels will be sent upon application.

JOHN A. OCKERSON,
Chief, Department of Liberal Arts.

In closing, I want to express my appreciation of the untiring efforts of the other members of the Executive Committee who have so ably seconded my every endeavor to make this the most successful convention in our history.

I also want to thank the exhibitors in the art gallery who have so generously contributed exhibits, and also the other members, for the share they have taken in making this convention a success.

Gentlemen, I thank you.

At the conclusion of the President's Address, no further business offering, an adjournment was had until 3 o'clock P.M.

AFTERNOON SESSION.

The Convention met pursuant to adjournment, President Nussbaumer in the chair.

President Nussbaumer: The Indiana Association will hold a meeting in this room to-morrow morning at 9.30, and all members are requested to be present.

Secretary Holloway read the following communication:

In response to the prevailing sentiment expressed by the membership of the various State Associations of th country toward a more fraternal relation—one with another and a closer union with the mother society, the National—a me ting of the officers of the several societies will be held Wednesday evening, at 8 o'clock, at the Claypool Hotel, for the purpose of formulating plans, etc. Every officer of the State Associations present is requested to attend.

C. J. VAN DEVENTER,
GEORGE M. BOLTON,
J. M. BANDTEL.

Secretary Holloway: In pursuance of that request we would like to see as many as possible of the officers of the different State Associations present at that meeting.

President Nussbaumer announced that the Pike studio, of Indianapolis, would be open for the inspection of visiting photographers on Wednesday, August 5th, from 2 to 4 P.M.

Announcement was also made by President Nussbaumer of a reception and concert given by the H. Lieber Company, of Indianapolis, to the P. A. of A. members and guests at Das Deutsche Haus at 8 o'clock this P.M. No postponement on account of weather.

Secretary Holloway then read the following:

INDIANAPOLIS, INDIANA,
August 3, 1903.

TO PHOTOGRAPHERS' ASSOCIATION OF AMERICA:

GENTLEMEN: On behalf of the manufacturers, dealers, and others interested in the Association, the undersigned beg to draw your attention to what they deem a most natural and rational desire, viz., for a voting privilege on the subject of the location of the annual meetings known as the Annual Conventions of the P. A. of A.

Heretofore no other privilege than that of being permitted to supply the principal financial support for the Association by the dues, space rentals, advertisement space, and entertainment funds had been granted them, and as taxation without representation was fought against successfully by our forefathers more than one hundred years ago, and

thereby an undeniable precedent for the good, right, and justice of our claim has been established, they now formally request that the following amendment to the Constitution of the Association be adopted by this present convention:

Every firm having paid its annual membership dues, and engaged space at the annual convention, is entitled to cast one vote through its accredited representative on the question of selecting the place for the next annual meeting.

Fraternally yours: Rough & Caldwell; Packard Bros.; W. I. Scandlin; H. A. Stone, rep. A. M. Collins Mfg. Co.; J. C. Abel, Manager Helios Photo Paper Co.; Willis & Clements; T. B. Livingstone Co.; Calkins Scenic Co.; H. Wertheimer, rep. Dorticus Mfg. Co.; H. C. Anderson, rep. Berlin Anilin Co.; Gillette & Burgess Co.; Carl Ernst Co.; J. F. Edgeworth, rep. Cramer D. P. Co.; L. J. R. Holst, rep. C. P. Goerz; M. W. Benjamin; South Bend Photo Printing Machine Co., Schuyler Colfax, President; J. Di Nunzio; B. Russegger, Manager, Rotograph.

The reading of the foregoing precipitated a discussion on parliamentary points as to how best to meet the request of the manufacturers, Mr. Max Teuber, of Chicago, proposing an amendment, but not presenting the same in writing. After some time consumed in the endeavor to arrive at an understanding of what was wanted, Mr. F. Dundas Todd stated that the proper course would be to present an amendment in writing, and First Vice-President Reeves solved the difficulty by giving notice of the following proposed amendment, to be acted on in accordance with the Constitution governing amendments at a later session, viz.:

Mr. Reeves moved to amend Sections 2 and 3, Article II., so as to read as follows:

Section 2. Active membership shall be open to all professional photographers of America and their assistants. Active members shall be entitled to all the privileges of the Association, and all legislative power shall be exercised by them, except as provided in *Section* 3.

Section 3. Associate membership shall be open to all manufacturers of photographic materials, dealers in the same, their representatives and employés, and amateur photographers. Associate members shall have all the privileges of the Association, but shall not be entitled to vote, except that each business firm represented shall have one vote upon location of place of meeting.

President Nussbaumer: Under the rules the proposed amendment will lie over for final action upon Thursday next.

Mr. Hearn, while desiring it understood that he neither antagonized nor championed the proposed action, and might perhaps vote in favor of it, nevertheless desired to know if all of the gentlemen who signed the petition in behalf of the manufacturers represented the feeling of their respective firms. He thought possibly some might have signed without consulting their firms, and he wished to know whether the signatures represented any more than the personal wishes of the signers—whether, in fact, they bound the respective firms.

To this inquiry there was no response.

President Nussbaumer: It gives me pleasure to introduce to you, gentlemen and ladies, Mr. James F. Ryder, whom you all know and who is certainly endeared to us all. We are to have a series of five-minute talks from men whom you all know, and Mr. Ryder will give us the first of them. (Great applause.)

Mr. President, Ladies and Gentlemen: I am very glad to be here. It is my first visit to Indianapolis. Among the inducements to bring us here something was said about Hoosier hospitality. I have experienced it. I have been as happy as a man could very well be, meeting all my friends. Everything seems to go our way very nicely. I predict that this will be the banner convention of the Association's history. Even the weather man has shown us some attention and we got an elegant shower last night. He did it all right. Everything so far as I see is all right. We have here a beautiful Soldiers' Monument, such as I have not seen before. I see much in Indianapolis that has greatly impressed me. Well, as I say, I am happy to be here. I had thought that I was about through attending conventions, but here I am—and I am glad! I like it. I like everything that has gone forward favorably to this convention. The cleverest and most impressive piece of work connected with it that I have seen is the book entitled *The Association Review*. I like nice books, and I like everything that contributes to our Association. It belonged to the present management to bring that book to the front. It was manufactured in Indianapolis and is as fine a piece of work as I ever saw.

I am proud to have been once in the photographic business, if for nothing else because of that book. Its illustrations are artistic and beautiful. Everything about it is fine. I would advise everyone here to secure a copy and to carry it home. I have laid aside a few copies which I paid for, in order to give them to my enthusiastic friends at home.

The progress of this Association and all that it carries with it—all that it means—is worthy of being perpetuated in the best form, and I consider that little book as being the best thing that has happened here, and I hope that it will have continuance of life. It is really the strongest and best appeal to those people who can appreciate it—and I think mighty well of it. I guess I am done. (Applause.)

(Report continued on page 353.)

FROM A PLATINOTYPE PORTRAIT
By C. Durand Chapman, Newark, N. J.

PORTRAIT, WITH SPACE FOR GREETING
By C. Durand Chapman, Newark, N. J.

PORTRAIT

By C. Durand Chapman, Newark, N. J.

CHILD PORTRAIT

By Dan. L. Johnson, Oshkosh, Wis.

FLASHLIGHT PORTRAIT GROUP
By W. W. Cowles, Rochester, N. Y.

The window it hath four panes,
And but one pain have I;
The window panes are in its sash,
Ah, me! I wonder why.—*The Lark.*

From a photograph by H. E. Cutler, Burlington, Vt.

A MAY MORNING

J. H. Field, Berlin, Wis.

From a sepia platinotype.

PORTRAIT
By N. Perscheid, Leipzig

President Nussbaumer: Possibly it may have occurred to someone that because we are limited to the use of the camera for giving expression to our efforts, that our resources for thought expression are limited to the same medium, but we will soon prove that this is not the case in the person of Mr. W. H. Potter, of Indianapolis, a Past President of our Association, who will now give us a few words. (Applause.)

MR. POTTER: I do not know what to say to you. I did not expect to say anything and came without any preparation. There are some things which have deeply impressed me that I will try to speak of as best I can with your kind consideration.

I have felt for years that we pose our subjects too much "out under the light." I am glad to see, however, a great improvement in that respect in the pictures here. There are quite a number of pictures through the hall that are taken on proper lines, and one in particular, by one of our leaders, is the best arranged picture in that line that I have seen. I feel in looking at it that he was forced to make the light the way he did, and he has obtained a result that I think he was not looking for, which, however, is what makes the picture the great one of his collection.

When you get your subjects so much out under the light the background is so lighted up that the subject is projected out to the front. and in half the photographs you see the subject seems as if it would drop out of the frame in front. Now, on the contrary, the artist makes his picture go back in the frame. This was especially borne in upon my mind when reading about Whistler, the painter, and the great care he took in preparing his subject to get it lighted in just the proper way before he began his sketch or painting. When he had the complete arrangement and lighting of the subject planned out, he then had nothing to do but to fill out his conception of the picture. That illustrates one of the most important principles of our art, that is, the necessity of getting a thorough command first of mechanical rules and principles, make them as iron-clad as possible, for this reason: That after having settled upon these necessary rules of technique and having them thoroughly at command, you are then free to follow the bent of your inspiration, neither transgressing the settled principles of the art nor being unduly bound by them. Thus the mind is relieved of the necessity for considering matters of minor detail. The true artist, when he looks on the ground glass and steps back again to glance at the subject, unconsciously discovers and at once rectifies any little detail that is wrong. He makes any required change almost by intuition. But your command of technique must be so thorough that the mind is perfectly free to work unencumbered by it. It is this unconscious operation of the mind that we see so well exemplified in the play of childhood. There the imagination is given full rein, and the action is free because unconscious.

In saying this I am not setting myself up as a judge over you. We are, of course, all subject to limitations due to our surroundings, and we have to adapt ourselves to our surroundings and limitations. If I have a room with a skylight clear to the further edge of the room, I can use a screen that will cut that light off, and as much as I can I must keep the subject back and get the light more in front.

When you go out to examine the pictures in the salon, remember this. The picture I spoke to you about a moment ago was one by Stein, of Milwaukee—a lady posing at a window. He had to get her back to get the window effect, and consequently his light in front. The atmosphere is illuminated so low in tone that it carries the sitter back with it to the background. Just in imagination put a frame around that picture and the picture would stay back in the frame. It would, as the boys say, "go way back and sit down."

I have a painting at home showing a tree, a vista, and, beyond, the water. I was looking at that picture the other night, in anticipation of making this short talk to you. I take a special delight in that picture. The tree is not in the centre, but in between the centre and the edge of the picture, the vista lying between. The tree, although brilliant in its darkness, goes back. It looks as though it was quite a way back from the frame. We should pursue the same treatment in our photographs. Some say that pictures so treated are too sharp, but I think that is a question. It is not the sharpness half as much as the illumination that hurts photographs. White drapery ought not to be smudgy, but should be low in tone. The detail should be not obtrusive, but there all the same, so that you can find it. The picture must be a unit, not projected out away from the background unnaturally. Lower the tone and the atmosphere, as it goes back in the frame, will carry the subject along with it. But I believe my five minutes are up. (Applause.)

President Nussbaumer: It gives me great pleasure to introduce Mr. Frank M. Pickerill, of Atlanta, Ga., one of our old veteran photographers.

LADIES AND GENTLEMEN: I will come to the officers last because I am nearer to them. As I look over this vast assembly and note the intelligent faces before me I cannot help but say, "Photographers, you are doing well, you are progressing." Only a few years ago I remember when you came to these conventions you were quite different from what you are to-day, and quite a number of us will notice a great difference in the pictures. Then we came with stove-pipe hats, black hats and all kinds of hats. We did not have the style. This year we have reached the climax. We have certainly gone up. Why? Ladies and gentlemen of the Photographers' Association of America, when you elect your officers choose men of snap and vim, men that will not sit on a three-legged stool and let business take care of itself, but men of push. This meeting is certainly a success. I have seen National Conventions that were not a success. Why? Because those that were engineering them did not give to them enough of their time.

The North has done well. You are progressing. The South is also doing wonders. I see before me some ten or fifteen photographers from the South. Here is one from Lynchburg, a man that stands out in mighty magnitude as a photographer. I see another farther back, from Camden, S. C. We have them here from Atlanta, Chattanooga, and other points. Ladies and gentlemen, the grand old South is going ahead, and if you do not look

out, she will get ahead of the North. (Applause.) Yet there is no hard feeling between us and we have here representatives from Atlanta, Macon, Columbus, Charleston, Savannah, and all through up into the Virginias. Gentlemen, you have a good many things to look after. You have got to look after yourself and your dealer, and you have to look after your reputation. What is a man without reputation? He is nothing. Now just excuse me for another quarter of a minute. (Laughter.) In 1851 I learned daguerreotypy over here at La Fayette, Indiana. I have been connected and associated with the picture business and the stock business and manufacturing business, all connected with photography, for fifty-two years. But hush! I will give away my age! Now, I will possibly not meet again with you for some time. I have not been with you for a long time; but allow me to thank you all. I want to greet you all, and to say that my life has been spent in this art, and I propose to go down under the shining and beautiful sun to my final rest kissing the beautiful clouds as they sink out of sight. I thank you. (Great applause.) (The speaker here took his seat, but, the applause continuing, again arose.) Ladies and gentlemen, I certainly am not entitled to that, but I rejoice to meet with you, and I want to compliment our officers who have certainly shown a great deal of dexterity and perseverance, and I think the books will show that we have a larger attendance than at any previous convention for a good many years. Keep her going. When others say, "Let well enough alone," just let her slide. Good-bye. (Applause.)

President Nussbaumer: We all like to meet a man who has the courage of his convictions. My earliest recollection of the next speaker, whom we all know, was when he appeared before us a number of years ago and made the declaration, "I will hew to the line; let the chips fall where they may." I have never forgotten that speech. We will now listen to Mr. F. Dundas Todd, who will tell us of his convictions.

MR. PRESIDENT, LADIES AND GENTLEMEN, MEMBERS OF THE CONVENTION: An Irishman once said that his mind was always open to conviction, but he wanted to find the man who would convict him! My mind is open to conviction. That reminds me of a little incident that happened no less than two weeks ago at the Convention of the Ohio-Michigan Photographers. There I was called upon very rashly by the officers to make a few remarks about pictures, and in my opening remarks I warned my hearers that what I was going to say would express the opinions only that I held at that moment. I said, "I want you to understand distinctly that I reserve to myself the full liberty to change any opinion I hold within the next three minutes or less. Some of those present looked rather curiously in my face as I made that remark. A few made comments about it in the course of the evening, but no one of them made any suggestions that I had said anything very largely out of place; but going home on the train the next morning I had the pleasure of the company of three or four of the Michigan photographers, and after we had gone about half an hour down the line a very serious young man said to me, "Mr. Todd, the remark that you made yesterday has been bothering me ever since I heard it. I thought about it all evening, and it bothered me in bed and is bothering me this morning. If you would not take any offence, I would like to put to you a question about it." I said, "Go ahead, what is it you want to know?" He said he referred to my remarks about changing my opinions, and that he had always been under the impression that it was rather derogatory to a man to have to acknowledge that he had changed his mind. He said, "I want to ask you if you can retain your own dignity and at the same time frankly tell people that you will change your mind?" I looked at the young man. Just at that moment the train stopped. I said to him, "Look at that house out there. Fix your eye on it." The young man looked at the house. I said, "Well, you have got one point of view of the house. Have you got another?" He said, "No, still the same point of view." I said, "Well, keep gazing at it." He kept his eye fixed on the house. At that moment the train began to start. In a few seconds I said to him, "Well, have you got a new point of view of the house?" He said, "Oh, yes, lots of points of view of the house." "Why?" He said, "It is because I am moving." Then I said, "Young man, there is the whole problem. So long as your brain keeps moving you are going to think, and your point of view is bound to change. Whenever you keep the same point of view for a considerable period of time you are standing still, and you ought rather to be ashamed of the fact than to be proud of it. (Laughter.) It is no disgrace to change your mind. To me the disgrace lies in never changing your mind, because it is positive proof that you are standing still—the only proof that I know of. What makes movement? It is the coal that goes into the engine that moves the train. What moves our minds? The human mind in my opinion is a piece of machinery, and that piece of machinery receives impressions through the eyes, the ear, the nose, the finger-tips, and by the sense of taste. Those five senses are the roads into the human mind, and out of these impressions, by some process that we do not understand, are brought out ideas, and the character of the ideas that come from any mind is determined by the kind of impressions that the mind receives. In other words, the human mind is a mill—grist mill, if you like—and if you pour corn into the five spouts, cornmeal comes out, and you cannot get anything else.

Now, then, let us apply that to you as business men. It has a twofold point of view. First, as concerns yourselves; second, as concerns your customers. Your work is the product of yourselves, not of the sitter. It is the expression of yourselves. It tells how much you know; and, unfortunately, not infrequently it tells how much you do not know. You can put into that work all that you know and all that you feel, but you cannot put into it what you do not know and what you do not feel. If, therefore, you want to bring good work out of yourself, the impression must first have gone in. If you feed upon yourself, your own work, as too many photographers do—feed on their own work, the consequence is that you are self-hypnotized into the belief that rubbish is good work. If you want to be up-to-date, as the common expression goes, if you want to be in the front line of the good workers, it is essential that you see good work by other men.

Get the impressions from the outside, not from within yourself. Do not work the endless chain business, your head making the work and your work sending impressions to your head, and so on, but rather get impressions from the outside that shall come forth in your work. You must get these impressions from the outside, either by going to conventions or otherwise. I tell you, gentlemen, you come here to see other men's good work, so that it will make impressions on your brain, and the result will come out in your own work by and by. Now, that is one point of view. The other is with regard to the customer. You want to make the customer feel that your work is very fine work and that he ought to get it in preference to that of anybody else. The first condition of success in that respect, of course, is that your work must be up to the market standard, and I am assuming that you are average photographers, not shining luminaries; therefore your work must be up to the market standard, otherwise the customer will not be satisfied with it. Now, assuming that your work is up to market standard, you must impress the customer with the idea that it is better than the market standard, and that he will get more satisfaction by coming to you than by going to anybody else. That is where advertising comes in. The suggestion must be made to him not once, but hundreds of times, that your work is fine work, and if no other impressions get into his head he will not want to have the photographs taken by anybody else.

Let me illustrate that point. If you were raised a Presbyterian, as I was, from the time you were so high, and had certain ideas put into your head at least once a week; Presbyterian truth given to you, not Baptist truth or Episcopalian truth or Roman Catholic truth, but Presbyterian truth put into your head right along week after week, the result would be that when you got to manhood that would be for you the only truth in the world; and when you were paying out money for religious services, you would go after the particular brand of truth that you had been educated to appreciate. You do not want any of the other kind. Now, the same holds true of all other forms of religious dogma. If you had been raised an Episcopalian, you would want Episcopalian truth and nothing else.

Now, that is good business, and it is your business to create that impression in the minds of your possible customers, that your work is the best work that is within their reach. If you keep hammering that idea into their heads, they will come to believe it. I need not enlarge on that point, because our friend, Mr. Scandlin, will speak particularly on Friday as to skill in advertising.

I want particularly to direct your attention to a card that is hung in the show-windows in the city here ostensibly for your benefit, by a photographer in town called Lawrence. I do not know him or his work, but he is rather a good advertiser. That is all right and good business. Now, he has taken a very smooth way of getting at it. He does not get out and tell the people of Indianapolis that he is the finest photographer in the city, but he advertises by these show-cards that he wants the photographers of this convention to come along to his studio and see something new in portraiture. The impression that he will create in Indianapolis is this: that he is simply a wonder; he is so far ahead of the rest of the photographers in this country that he can afford to invite this crowd to come along and see something new (laughter), and I bet he does not care ten cents whether you come or not! (Applause.) But he wants the folks in Indianapolis to believe that he is the finest photographer in this country; that is the impression that he wants to convey, and it will be talked about right along for weeks and months to come. It is simply an illustration of this matter of suggestion. But I think my five minutes are gone. (Applause.)

President Nussbaumer: Possibly, Mr. Todd, you will change your mind and stop moving when you learn that we have arrested some one for your particular benefit. This gentleman has something to say that is good. I know it is good. I have the pleasure of introducing Mr. Alfred Holden, of Philadelphia. (Applause.)

Mr. President, Ladies and Gentlemen: What am I here for? Answer that question, will you? Put it to your own selves—what am I here for? I am here because I want to look at you. I am standing here talking because I want to talk to you. As the old comedian said, "Lay but a hand upon me, and you will touch me; look at me and you will see me!" I have come here to touch you and to see you. I have come here to take away from you some of your personality. I have come here to give you some of mine. If I fail in accomplishing anything, it just remains me and only me who loses by it. But if I am here and you can get something from me, you are perfectly welcome to it. The principle, gentlem n, is one that is applicable to every man who is within sound of my voice; the man who has something of value only makes it valuable when he gives the idea to somebody else. (Applause.)

I have my mind fixed on certain things that I would like to talk to you about. The time is limited, but I am going to get through with just what I have to say just as shortly and as sharply as I can. In the first place, I have in mind, what is the meaning of incentive? What has prompted me to come here? The incentive to come and gather something from you. In looking over the exhibits this morning and in looking through the rooms, I find that everyone of you has had an incentive to do something. You take materials which are almost numberless, and with them everyone of you have expressed yourselves in some way. But there is a question that sooner or later will come to you which will mean something perhaps to this Association, and that is what incentive can we offer to make it greater and to make it stand as it ought to stand, a nationally recognized organization—recognized by every prominent newspaper in the country. I fail to see that here, only in little short articles of about an inch long. Now, you can make that reputation greater. How will you do it? By expressing your opinions as they ought to be expressed.

There is something being said, Mr. President and members of the Association, about medals, and whether we shall adopt the policy of giving medals or not. A few days ago I had occasion to stop a little child on the street and say to him, "Say, Bob, won't you go down to so and so and get me so and so?" "How much is there in it, Mr. Holden?" he said. Now, then, can this Association recognize anything of that character? Can it offer an incentive to bring young men here? The greatest compliment that I ever had in my life was when a young man came to see me and

asked me how he would get a certain effect which he admired. I have a boy. Many of you have boys. What are we going to do with them? Is it not well to begin at the beginning; is it not well to begin with that boy and begin patterning him after his father? Some men send their boys to schools and colleges. Other men send them into the workshop to learn the trade of a machinist. Others send them to learn this and to learn that, but it seems that a great many of our boys go into the photographic business because their "pop" is a photographer, as the saying generally goes. I want to say this to you: Study your boys, and if you find the least grain of resistance in their nature, if you see that your boy is not built in such a way that he will make a successful photographer, you had better keep him out of it. We want more men of individuality in the profession, men who will not be bound down by any set rules or laws. We want men who can master the material put into their hands.

Many of you in the past two or three years have made efforts to make pictures. Many of you have made pictures in the true sense of the word. Many of you have taken up this material and failed in the beginning and in the end to understand it. Am I right, or am I wrong? Now, take that material with which you can best express your thoughts. Use it to all intents and purposes and with all the skill and knowledge that you have. Whatever you come to understand, put it forth in a commercial or business way, so that it may come back to you in honor and in days. If I give a man a thing which is of no value to him, I simply make an enemy of that man instead of friend. Therefore, let us be serious in everything we do. I would not talk here if I were not serious, and I want you to be serious in all you have to say.

If in the future we should decide to give medals or anything of the kind, let us do so in such spirit and with such surroundings that those medals can be worn with honor. I want to see this organization become greater and greater. I wish it to grow as it ought to grow. I would give medals to bring young men here, but the recipients should be educated so as to feel that they are a great honor and of great value and a stimulus to greater achievement. (Applause.)

President Nussbaumer: It gives me pleasure to introduce to you Mr. W. Forsyth, an Indianapolis artist, who will speak on the subject of photography from a painter's standpoint.

Photography from a Painter's Standpoint.

Mr. President, Ladies and Gentlemen: This is the third occasion on which I have had the luck, or ill luck, to be requested to address a photographic gathering. Each time I promised myself that I would never do it again, not because I bear any ill will toward photography or photographers, but simply for the reason that I always wondered just exactly what I am here for, or what possible good I can do, because I am purely a painter and only interested in photography from what you might say an outsider's or spectator's point of view.

I recognize the fact that to a great many, perhaps most of you, photography is a profession which, like many others, you are interested in because you make your daily living from it, and the art feature is rather incidental than the main thing. I am always rather apprehensive as to whether I can rightly interpret photography for photographers from the painter's point of view. I was looking over a set of books that I got not long ago, magnificent books, things that thirty or forty years ago were undreamed of. They were reproductions of some of the most famous pictures, especially landscape pictures, that have ever been painted, and they come nearer to an actual sight of the pictures themselves than anything I have ever seen. They give you an impression that you could not possibly get in any other way. Often a good copy of works of art as represented in these books would not give you as good an impression of them as do these reproductions. This to me is a startling illustration of the tremendous part which photography plays in our modern life.

It is simply amazing to think of all that photography has done, especially in such things as these reproductions. They present an impression of these pictures to people who perhaps will never by any possibility have an opportunity to see the originals. In many of them even the colors are reproduced as well as they can be in the flat.

One must be blind not to appreciate the tremendous strides that photography has made in all its various ramifications. It comes into our life in so many ways that unless our attention is called sharply to the fact we are apt to forget the manifold parts that it plays.

I speak of it in art in this particular instance in these books, but this is only one of its various forms of usefulness, an illustration of what you may call the most recent improvement in photographic processes of art reproduction. But photographs have been made of art work since the beginning, and by that means a knowledge of the art in a certain way at least has been spread world-wide, whereas otherwise it would not have ramified except through books. A knowledge of art can be gained from a reproduction of actual work.

Science also owes a great debt to photography by reason of the particular merit it has which is favored by so many photographers and which is the origin of so much discussion, namely, literal accuracy. That is the principal factor in the debt that science owes to photography. No scientific man wanting any reproduction by photography for the purposes of illustration would want anything connected even remotely with an enthusiasm for art pure and simple in that reproduction. Herein lies the great value of the perfection of photographic processes, and in getting what is termed a perfect plate. That in science is the important thing; but that indeed has nothing to do with art. It is almost pure mechanics. Yet this is highly valuable also in the matter of reproducing pictures and prints for books, for instance. Innumerable reprints have been made that could not have been possible without photography.

Twenty years ago when I was a boy and began the study of art, one of the most important forms of art in America or the United States at that time was wood engraving. We were proud to point to our school of wood engraving as the most perfect in existence. Perhaps it was, although on that point there might have been room for discussion. This school of wood engraving had grown up here in America almost independent of efforts in the same line abroad. It reached its ultimate point of development about the time when they took up photography in the United States. Then they began, instead of making a

drawing on the block of wood, to photograph the drawing to any size they liked on the block, which at once freed them from the hampering conditions of fac-simile work or restriction to the actual size of the drawing. It also enabled the artist to make a freer drawing and give him greater liberty especially as to size. In this way photography at once became the assistant of wood engraving; but hardly had it taken its place in wood engraving and in the development of that to perfection, than it became the death of wood engraving. We have to blame, or thank, as we may take sides in the matter, photography for the virtual extinction of the American school of wood engraving. Of course, it is useless to mourn over what is gone. What might have been developed in the line of wood engraving, its future alone would have told, but all at once it became a thing of the past, when the half-tone began to be used instead of the wooden block. It was a case of practical business requirements versus art and skill. It took a great deal of money and a great deal of time and a great deal of training to produce a wood block, and when the half-tone process was discovered it was so easy to make a picture in that way for a magazine or a book that this process at once supplanted the older method, and wood engraving ceased to be one of the manifestations of American art. Instead of a painful and long and laborious process of reproduction from the wooden block, we suddenly came into full possession of facilities for reproducing pictures of all kinds, both commercially and artistically. Photo-engraving has gone on developing from that time up to the present day, and to-day instead of the insignificant half-tones that were first produced by the photographic process we have the reproduction of pictures with almost their actual values. This is a tremendous development which has been constantly proceeding. It is an immense gain over the older processes.

Along the line of portraiture photography has also made a wonderful advance since the beginning, although in this direction there was good work done, often accidental, even from the start. Here again photography has supplanted many quiet workers who formerly made their living by painting portraits. Perhaps a host of these might better have made their living at something else, because I personally would prefer a good photograph to a badly painted portrait; so that photography has eliminated the poor portrait painters of a former time entirely from the scene of their endeavors, although you may say the camera is a machine and all that. Yet it has substituted something at least that is absolutely accurate and trustworthy, though not always perfection by any means.

As to what use photography is to the artist is a matter of question. I doubt whether any really creative artist will ever be able to make use of photography to any great extent in his work. There are limitations in that field. Of course, photography is seeking to develop an art side, but there is a good deal of discussion upon that both among artists and photographers, whether it is right or legitimate. It depends on how strong a man is, how much use he makes of it; but I think that the hopes that were once entertained of photography as an assistant in creative art have failed. They have rather fallen to the ground as far as we can judge now. There is nothing so far as I know that any artist has found out that will take the place of the living line as the man sees it from his own personal point of view; and photography cannot do that. Take the nude figure, which is often necessary, especially in great decorative work. It is absolutely necessary that they start with the nude, and, as far as I know, no great use at least has ever been made among able painters of the nude in furthering their work of photography, because there is lost the one thing that makes the drawing of the figure to the artist beautiful. That is virility and artistic intensity, with which the painter who is really an artist can seize and follow out and express himself. There is something gotten in that way that cannot be had by the use of a camera, which is a machine. If the machine were able to do that, it would probably be invaluable to a great many painters in this very field; but that is not the case as far as I know. There is no likeness between what an able draughtsman makes of a figure and what the machine will do. Now, that is no reflection of photography that it must fail when it comes to creative work of that kind, so that what we once hoped for has not been realized in that way. It was hoped for by a great many people.

There is another thing right there that I would like to explain to you. However good the photograph may be, even though it may be much closer to nature, much finer in its details than any artist can hope to make a painting, yet the artist cannot receive the impression from a photograph which someone else has made such as he would receive from contact with the scene itself. He cannot learn the essential facts for himself from something that somebody has done. He must go to nature and gain knowledge at first hand by actual work in that direction; so that he can take nobody's statement, however accurate, as a substitute for that knowledge which he must gain by his own toil. That is one and probably the principal factor that interferes with the use of good photography in art in place of the actual sight by the artist.

In the enlarging of cartoons photography is very seldom used by artists even nowadays. They use instead a process of enlarging, following the old methods of reproducing by block spaces.

As a renderer of facts, of course, nothing can be compared to photography, because no one can give the same accuracy of detail that can be secured in a photograph. This is illustrated in some of the recent note books that are being issued constantly. I was looking the other day at some photographs of birds in their nests. They are shown right in the trees in their native haunts. Photography shows some marvellous results in that respect, and I cannot help wondering at the accuracy, the skill, the quickness, and the precision with which such things are done. They go far beyond what any artist could do in trying to render the actual fact as it happens. Of course, the artist can borrow from his imagination and so reproduce certain facts in nature, but I am now speaking of the case of the camera presenting scenes which no artist could reproduce. These are some of the practical things which photography has done.

I take it that there are two motives always present with a person who is skilful in photography. One is his art feeling, his expression of the artistic; the other is loyalty to what the camera and the plate ought to do, what it is most calculated to do.

I am pretty sure that there is a division right here among you as to which one of these two elements is to govern, and I think most pho-

tographers are rather inclined to favor the side of mechanical skill, the highest mechanical rendition of a thing by means of skilful manipulation and a perfect plate. Of course, a great deal of skill and knowledge enters into all that kind of thing. I think most photographers are rather inclined to favor that side for technical reasons. They want to reproduce the object by the means which they possess, and anything that falls short of that arouses in a conscientious man his questioning whether it is just or right to go beyond the actual use of the instruments which he employs. I suppose there will always be photographers who will favor literal work notwithstanding the growth of what is called the "new school."

I do not favor either of these. I think that there is a good deal of prejudice probably among artists to photographs at all, but I do not see any reason for it. This is a controversy, however, with which the true artist need not meddle; it does not come within his province, nor does he want it to. Even in photography the man is not required to go beyond his field as a skilful photographer or consider questions which are perhaps superfine.

But it is not the development of photography which of late years has directed most attention. What is called new photography is at present in the public eye everywhere all over the world, wherever attention is paid to photography at all; and the new photography is a distinct attempt to bring photography within the field of art. There is a constant discussion going on about that that I can see no use in, as to whether art and photography are the same, or whether they can be made the same, or not. I think it depends altogether upon other things. The new photography, I suppose, is quarrelled over among your people just as much as it would be between the artist and photographer of the old school. The new photography aims to make a picture, and it sometimes aims to do things that hitherto have been done by the artist—by the painter. It produces in a way the special lines of development of an artist in his sight; that is, to single out things that are specially adapted to the person advertising them, and to develop them according to his light.

I think that the origin of the new photography was really dissatisfaction with the results of the machine. Probably its first origin was through accident. I do not know about that. It would be interesting if one could follow it back and find out where the diverging line commenced, whether through a happy accident in the taking of a picture by means of the camera there arose the manifestations of the new art. But I think it was in the dissatisfaction of what is reproduced by simple mechanical means—*i. e.*, the camera. You can, for instance, take a person's photograph so that any one will recognize him. The actual facts such as the construction of the face, etc., are there, and yet you find that the picture is not satisfactory; there is something lacking. The sitter or his friends are not satisfied with what has been done. Hence, I think all the research of recent years has been an endeavor to get over that fact, to reach out for something else, something more expressive of both the character of the sitter and the character of the photographer. That I look upon as the whole thing in the present development of photography, and this phase will probably remain for a long time to come.

In a photograph, of course, a great deal depends upon the manipulation of the plate. The old style photographer objects to that, or I think he used to. Whether he does now or not, I do not know. But the manipulation of the plate has been a recent injection in the art of photography. In many cases it is not called legitimate. There are so many means by which the plate can be improved, from the point of view of art photography or, in fact, from a purely practical point of view. There are various ways of developing pictures by way of papers, by printing, by manipulation of all kinds so that the result is entirely different from what was formerly obtained. Instead of the hard, bare statement of fact, however skilfully done, we now see efforts made resulting not in the bringing out of everything, but in the concealment of something, or in the elaboration of some special part at the expense of the other; the subjection of things that are not conducive to the betterment of the picture; the accenting of light or the subjection of light; the treatment of different parts of the picture, or the treatment of different figures in the same picture; the treatment of different parts of a landscape. All those things go toward the making of what is called the new photography. I think it has been called a great many names both here and abroad—but principally here in America; but it has been carried so far that in nearly all of the recent exhibitions there has been a department of the new photography. This is true of all the exhibitions that have taken place for the last five years. I think it originated in Dresden, at first, or in London—I forget which. From there it has spread to every capital where great exhibitions have taken place. These pictures were not always placed in competition, or at least were not at first, but were selected especially with regard to their artistic qualities—qualities that were approved of by artists, by painters, and accordingly hung up in these exhibitions. Probably this was not after any argument as to whether they illustrated art or not, but because they were beautiful. The fashion has spread to this country. We all of us have seen the efforts of specialists in this line, men whom you can hardly call photographers in the old sense, because they are constantly engaged in experimenting in the development in the new photography. They want to bring nearer and nearer to the artistic standard what they are capable of.

I do not think that this, however much it may be followed out, or however far it may be developed, can be followed to a conclusion by every photographer. For instance, one of your photographers this afternoon called attention to certain things that always ought to be in the mind of the photographer who is vitally interested in making good pictures. But this recent development is necessarily out of the question and out of the interest of most photographers. Yet for that reason it should not be condemned by the rank and file of the profession simply because it requires a special temperament as well as industry and force. Most photographers have neither the time nor the means to follow out this idea.

Right here enters in the principal question in dispute between artists and the new photography, viz.: Is it art? They are trying to put a label on the thing, which I think is an unnecessary process, because if a thing is beautiful it is beautiful, and that ends it. If it is beautiful enough to be termed a work of art, it is art, without including photography or without excluding it. A beautiful thing necessarily stands for itself; and if it is within the limits and bounds of photography,

why not follow it out, if you have the necessary temperament and the time that is necessary to the making of it?

To follow it out to its utmost perfection, of course, requires first of all feeling. No man or woman who follows photography can ever approach an artistic development of photography, or approach art pure and simple, who does not first feel, and feel intensely, the appeal of the thing to him artistically. He must have that within him, and he must be moved by that from without before he can hope at all to do anything that is worthy. Otherwise his work will be contradictory. He will produce what I believe you people call fuzzygraphs, when you juggle your camera and make things through some mistake or other, the same happy accident, produce something that is not within your original design or intention. The result of such an accident may be a very pleasant thing to look at, but unless it is a legitimate result of an intent to reach some ideal that actually moves you, it is not art. If it is just an accident, a pretty picture without any intention, without any appeal to you beforehand, it is only an accident, not a work of art. The condition which the artist must meet is: Is it capable, has he the temperament to feel the artistic? Has he the temperament to know what to do not only afterward, but beforehand? Can he by the combination of colors, of light and shade, of atmosphere, etc., attain his object, whatever it may be, in the picture? Does he feel as the artist feels? If he does not, he is simply making use of the machine and the trickery. That I should not call legitimate, and, as opposed to that, I would take the stand of the stickler for the clear plate against the trickery every time. But I would take the side of the artist photographer who has an intention and pursues it in the same manner that the artist does. If he has that pronounced characteristic that dominates the artist, then he will do something well. He will attain something more than a fixed, frozen, accurate representation of the person portrayed. If he takes a landscape, he will treat that landscape both before and after so that it will reproduce the sentiment that moved him in the sight of it. If he reaches that aim, he will bring photography into the close neighborhood of art. Therein enters individuality pure and simple. The individual is everything in painting and so in photography. The individual settles the whole business.

Artists and photographers do not often come very close to one another except in this latter-day phase of photographic development; but there is one thing that every sincere photographer who is really interested in his profession and who has any spark of art in him, equally with the artist; and that is in the seeking out of the beautiful. In that line the artist and the photographer are in harmony. In that they are both artists. They are seeking out the things that most appeal to them in the world and are trying to perpetuate them because they are beautiful.

That is the ultimate development of art photography and of art itself.

I thank you very kindly for listening to me. (Applause.)

The convention thereupon adjourned until 10 A.M. Thursday, August 6th.

On Tuesday evening the H. Lieber Company, of Indianapolis, Ind., gave to the visiting members of the Photographers' Association of America, their families, and invited guests a reception and concert at "Das Deutsche Haus," which was well attended, and proved to be a most pleasing feature of the general entertainment.

Second Day—Wednesday.

This was Manufacturers' and Dealers' Day, and the Association held no meeting. The members devoted their time to inspecting the various exhibits and purchasing goods.

The respective manufacturers of photographic papers utilized part of the day for demonstrations.

In the evening the manufacturers and dealers tendered to the visiting members and their families, and invited guests, a special trolley-car trip to Fair Bank, where a concert was given.

Third Day—Morning Session.

The convention met on Thursday morning, pursuant to adjournment, President Nussbaumer in the Chair. There was a large and representative attendance, as upon the opening day.

Secretary Holloway, after making some minor announcements, read the following:

The officers and representatives of State Associations will meet this evening at eight o'clock in the room used for Aristo demonstration. This meeting is important and all officers of State Associations are requested to be present.

J. M. Bandtel,
C. W. Hearn,
and many other State officers.

Indianapolis, August 6, 1903.

To the Twenty-third National Convention of P. A. of A.

Gentlemen: Resolved that the Twenty-fourth National Convention shall contain a prize competitorship clause.

1. The import of this is to give all a chance to secure a prize.

2. That all past and future prize winners shall exhibit for the good of the fraternity and not for prizes.

Such exhibit to be so marked.

M. Wilschke,
Chicago.

TELEGRAM.

Springfield, Mass., August 4, 1903.

J. George Nussbaumer,
President P. A. of A.:
Best wishes for greatest convention yet.
George H. Van Norman.

To the Secretary of P. A. of A. and Members,
Indianapolis, Ind.

Greeting: It is with a deep feeling of regret that I am compelled to write, instead of being able to grasp you by the hand and put my shoulder to the wheel and assist in making this the Twenty-third Convention of our Association, the *greatest ever*. Business and poor health prevent me from getting away from Boston this year, but I wish the members of the P. A. of A. would decide to pay a visit to Boston in 1904 and hold their meeting in the ideal city for conventions.

You will find on the floor before you a number of Boston's good fellows, who I know will voice the above sentiment, but East, or West, my heart is with you. Yours,

August 3, 1903. Will Armstrong.

Louisville, Ohio, August 4, 1903.

Mr. J. George Nussbaumer, President, and Members of the P. A. of A. Convention.

Dear Sirs: I regret very much that I cannot meet with you this week at Indianapolis. This is the first P. A. of A. Convention that I am unable to attend since the "Celeron" Convention.

Wishing you all a pleasant and profitable time, and hoping to meet you in 1904, wherever the convention may go, I remain,

Yours truly,
E. M. Youtz.

Secretary Holloway then read the report of Secretary Reeves for the year ending January 1, 1903, showing total receipts of $3,239.75 turned over to the treasurer, and the account duly audited and approved on January 15, 1903.

President Nussbaumer: Vice-President Reeves has a message for us, I believe.

Mr. Reeves: I am the bearer of a message from the Indiana Association of Photographers and the Winona Assembly and Summer School Association. As a matter of information to you, I will make just a few remarks by way of preface. The Indiana Association of Photographers has held its last two conventions at Winona Lake, in the northern part of the State. Winona Lake is owned and controlled by the Winona Association, an organization which has the support and encouragement of the very best people of the United States. Its Board of Directors and managers comprise several millionaires, men who take a pride in the organization and in the improvement of the grounds. They are building a resort and educational school or Chautauqua second to none in the country. They have 1600 acres of ground and on the grounds a number of fine hotel buildings and various schools. At the present time they are building a school for boys, to cost $60,000. This school will be kept up in this manner: Various men of means in different places over the country are supporting these boys. Each man sends from one to four or as many boys as he feels that he cares to support and pay the entire expense of, educating them at this Winona Association School. They also have their summer schools, which are conducted on a very high plane. As I said before, when completed, this institution will be perhaps the greatest of its kind in the United States. The Indiana Association has held two meetings there upon the invitation of the Assembly, and we have found it an ideal place for recreation. The influences thrown around us there are of a high order and such as we should strive to obtain. We there meet the very best class of people in the country, people of refinement and culture, and we enjoy the use of their beautiful grounds and pure water. The people whom we meet and the surroundings should there stimulate us to attain the highest artistic standard within us.

The Photographers' Association of Indiana has taken the initiative in starting there a permanent art salon. There is a building there, octagonal in shape, some eighty feet in diameter, in which we have held our meetings. Its walls are especially suited to the hanging of pictures, well lighted, and a very delightful place in which to hold conventions. A site has been given us directly across the street from the Governor Mount Memorial Institute School for Boys, which, as I told you, is being erected at a cost of $60,000. They have given us one acre of ground there, worth $1500, and they have offered to give us as much money as we will raise to maintain the building and pay the taxes and insurance, etc. They offered to give us the use of it whenever we wish it and to use it as an auditorium for other meetings. It is the purpose of the photographers of Indiana to establish this art memorial or gallery for photographers, wherein everything can be hung—the product of our hard labors, the result of our hours of study, and I might say the drippings of our souls which we often put into our best productions.

Famous painters have places for their pictures, and as the years go by these serve to make their fame become greater and greater. Why cannot we photographers do the same? We certainly have men in our profession who are just as good artists as the painters. We spend hours, days, and weeks in conceiving a picture, and after we have produced it, we desire that the world shall see and appreciate it. It is brought to this convention and is appreciated for four or five days by our people only, and then is taken home perhaps, and the picture is forgotten by the world. There is, therefore, no great incentive to strive to attain that which is possible for us; but if we could have a permanent repository for such a picture and have it cared for by such an organization as the Winona Association is, and as we know it will be, and the picture remain on view for years to come, would not that be a high incentive for us?

They offer to meet us not only half-way, but they offer to meet us over half-way, for they agree to raise as much money as we will, to donate the ground and maintain the building for us. This is certainly an opportunity for us that we should not lose. I wish to read a communication which they have presented, and I will say that we have assurances from the management that they will go even further than is here stated, for they say that they think they can influence men who will be willing to put from $10,000 to $20,000 into this undertaking. All they want to know is that we will take hold of it in good earnest.

The photographers of Indiana alone have raised over $500, but we wish to interest the photographers of the entire country, and to throw the doors of this salon open to everyone. We have planned to start the exhibit in this way, to call for one and two year loans of the best product obtainable. That may giv· us a large exhibit to start with. That will arouse interest to a great extent immediately. Of course, if we were to select but one picture here and another there, it

would take us a long time to get an exhibit in order; but when we call for one and two year loans, from the pictures so obtained a jury will select those pictures which are considered worthy of a permanent place in this hall.

You see we have laid a good foundation. When the first year loan has expired we can return the picture to the exhibitor, but the honor of having a picture there will not be returned. At the end of two years we will return those which are not retained for permanent exhibition, but, as in the case of the first year loans, the honor remains. The honor is not returned with your picture. You have the honor, credit, and satisfaction of knowing that you have been represented in this art salon, which is a building that will stand for all time to come.

Mr. Reeves then read the form of agreement, as follows:

THIS AGREEMENT made this.....day of ..... , 1903, by and between The Winona Assembly and Summer School Association, party of the first part, and the Indiana Association of Photographers, party of the second part, WITNESSETH:

The party of the first part agrees to devote one (1) acre of ground at a point to be mutually agreed upon in the campus of the Winona Assembly and Summer School Association to the partnership use of both the party of the first part and the party of the second part, and to take down and remove building known as the Cyclorama, with the exception of the old office building and to erect on said acre of ground the old building in accordance with old plan, except that it shall be in height eight (8) feet less than formerly.

The party of the first part agrees to erect in accordance with plans submitted by the party of the second part an addition to the Cyclorama, which shall be used as a working gallery, and the party of the first part further agrees to care for the said building, and to pay all insurance and taxes thereon.

The party of the first part further agrees to pay one-half the cost of tearing down, removing, and erecting said building.

The party of the second part agrees that the party of the first part may use the building at any and all times when not in use by the party of the second part, and the party of the second part further agrees to pay one-half of all the expenses of tearing down, removing, and erecting said building..

The party of the second part further agrees that it will, at the next National Convention of the Photographers' Association, to be held at Indianapolis, Indiana, and in such other places and at such other times as may be feasible, advocate the erection of a handsome building, to be of pressed brick or stone, and to be used for the permanent exhibit of said State or National Association, and that it will use every endeavor to raise a fund for the erection of said building.

The Winona Assembly and Summer School,
By Sol. C. Dickey, Sec. and Gen. Manager,
Party of the first part.
Indiana Association of Photographers,
By Geo. J. Parrot, Pres.,
Party of the second part.

Mr. Reeves: The Winona Association last year sent me an invitation suggesting the advisability of having the National Association meet there this season, but I told them that at the present time we did not think their buildings were large enough to hold our exhibit. While their hotel accommodations were very ample and very nice, yet we felt that the buildings were not sufficient for our purposes. They are, however, erecting new buildings and it will be but a short time until they can care for the National Association. I assure you we could not go to a better place. However, the future will have to determine that.

Mr. Bellsmith: I move that the communication be received and filed. (Carried.)

Mr. Reeves: May I add here that we have blank forms of subscription? I feel that a great many of you would like an opportunity to contribute something personally to this great work. That is the purpose we had in presenting this matter, and we hoped that the Association itself would take some action upon it and come to its assistance. We would be pleased to have all of you subscribe some amount, whatever you feel that you would like to contribute. We have contributed our mite, each of us in Indiana, to the erection of our State House, and it is to-day a matter of great pride and satisfaction to us to feel that we have thereby a part ownership in that magnificent structure. We have also contributed our mite to the erection of the monument to our honored dead, which stands in our Circle, and in gazing upon it we feel the stir of patriotism in the knowledge that we have a sort of proprietorship in that also. You can readily see the possibilities of this movement which we have initiated, and it occurs to me that you also will take great pride and satisfaction by lending your assistance to this movement. Here are the blanks, and I trust that you will do something to start this undertaking by January 1, 1904. All sums will be placed in the hands of the Trust Company. The committee is composed of men who are honorable and conscientious, and I assure you upon my own honor and upon the honor of the State Association that there will not be one penny misused. I thank you. (Applause.)

Mr. Holden: There are sometimes occasions in life when honor should be paid men where honor is due. This Association has been in existence a number of years, and men have given their labor, time, money, and energy for its success; consequently, Mr. President, I move that all

Past Presidents of this Association be put upon the list of Honorary Life Members.

Mr. Bandtel: Mr. President, I heartily second the motion.

The motion, being put to vote, carried unanimously.

Mr. Potter: Does that excuse them from paying dues?

President Nussbaumer: It certainly does.

Mr. Potter: I thank you, gentlemen.

President Nussbaumer: Mr. Scandlin desires to make some correction in his article in the *Association Review*.

Mr. W. I. Scandlin: My attention has been called to the necessity of the correction of a name and the addition of two or three other names in the historical sketch of this Association which I had the honor of preparing for the souvenir programme, and with your permission, Mr. President, I would request that these corrections be noted upon the minutes of this meeting, as that seems to be the only way in which the matter can be reached. Mr. James F. Ryder calls my attention to the fact that for the first meeting of the Association, which was held in Chicago in 1880, there is named as the list of officers: President, John Carbutt; Secretary, G. A. Douglass; Treasurer, A. Hesler; whereas the correct statement should be: President, J. F. Ryder; Secretary, A. J. Copelin; and Treasurer, A. Hesler. I may say that the reason for the error was that no record was made of the early meeting which elected officers who served until the August meeting, and there being no report of the same in the photographic press, from which my material was collated, I had no means of discovering the omission. The list of officers, however, supplied by Mr. Ryder, as above, should be added to the record. Mr. Ryder informs me that the mention of Mr. O. P. Scott as being elected President at the Boston convention in 1889 is incorrect, as Mr. Scott was defeated and J. M. Appleton was elected at that time.

President Nussbaumer: At our last convention we elected to the office of First Vice-President Mr. H. A. Collings, who is here this morning, and has a few words of greeting for us.

Mr. President and Friends—for I can well call you friends—I find that in the association of photographers there is a social, yes, a fraternal feeling existing that is much stronger than it is in your own individual cities. I remember some seven years ago two photographers came out of a Maine city to the National Association meeting at Celeron. There happened to be no other photographers from their section at the convention, and they were thrown, by reason of no other companionship, very closely together, and before the convention was over they had become such good companions that I understand they roomed in the same room. So that shows you how the Association meetings bring photographers nearer together. (Applause.) I wish to thank you, Mr. President, and all the rest of the Executive Board for the kind feeling that you have toward a deserter. One year ago I was elected First Vice-President of this Association, an honor which I can assure you I appreciate; but in consequence of business engagements I was forced to leave the Association as an active member, notifying the Executive Board of the change. I found that they took it very willingly, and Mr. Reeves took upon his shoulders the work that he had so gladly dropped the year before, went back into the Association again, and has labored earnestly and zealously with the assistance of the Board in making this convention one of the grandest meetings that you have had. (Applause.) I am in a position now where I am no longer a member of your official family, but I want to congratulate you on the way you have run the thing since my assistance has not been required. I have had quite a little experience in Association work. I was Secretary of the New England Association for two years. During that time I was ably assisted by the New England photographers, and Mr. Charles W. Hearn, who acted without any compensation and worked zealously for me. That same energy is exercised by him to-day. I understand that Mr. Giffin, of your Association, has also worked zealously. He told me that he sent out some five hundred or six hundred letters. I wish to thank you all kindly for the courtesy shown me, and also in behalf of the manufacturers who have assisted you in giving this grand convention.

Remember, brother photographer, no matter how small you are, no matter whether this is the first National meeting that you have attended or not, it is your duty to take an active part in this Association and to attend all meetings. You are here this morning. Things of importance are going to transpire. You are going to get warm in a little while; you are going to take up and discuss things that are of the greatest importance because they will decide whether you can attend the next meeting or not. Remember that if you do not caucus, you may not be able to attend the meeting later on. (Applause.) So it is your duty to stand by the boys and stand by them true and good. (Applause.)

I see before me new faces which I did not see at the last National Association. I am therefore led to believe that what keeps alive a National Association is that class of photographers that live within a limited distance to where your convention is being held. We have with us also another class that do not need any attention. They have attended all the Association meetings and have had their pictures upon the walls. They can go to sleep while I say a few words here which I will address to another class of photographers. We have scattered over the country various kinds of schools, primary schools, grammar schools, high schools, etc., and to every twenty or thirty high schools there is perhaps one college. Now, let us

all go back to school again for a minute. Most of us will take our place in the grammar school of photography. (Applause.) We have very few that will land in the high school of photography, and comparatively few have reached a college degree. Now, it is to the grammar school of photographers that I want to say a word. You go about and you see the pictures of greatest interest to you and you are puzzled to know how this and that effect is produced; but do not think for one moment that you can carry home all the ideas that you see about you, and throw away your own work. If you do, you will neither satisfy yourself nor your customer. Rather, I would say, go slow. Let us pick up the little good that we can see and comprehend, and work out in conjunction with our own work, and then we will see that our work is improving, that our customers are better pleased, and as a whole that we have been the better for coming here. I had a dream a short time ago. I dreamed that I stood at the foot of a large building that was under construction, and I was told by those around me that if I went to the top of that building I could see a beautiful view. I started up the stairs. Glancing around I found the view was beautiful, but I did not stop to drink in its beauty. I wanted to get a better view higher up. I continued to ascend the stairs, which grew steeper and steeper. Finally I reached nearly to the top and I found myself on a ladder. It commenced to creak and the rounds grew farther and farther apart. I strained every effort to reach the top to get that most beautiful view—but I fell! Too many of you are going beyond your limits, trying to attain certain ideas that you cannot, and you fall. I say, let us take the scenery in as we go along in photography. (Applause.) Let us stop on each landing and see if we cannot get a firm footing and renewed strength and breath before we venture to ascend another flight.

I want to be very brief this morning. I simply want to say to you friends here present that there is a train which runs to the college of photography. It is a swift train. If the average photographer here attempts to board that train, he is going to fall; but right behind it is another train running to the high school of photography, which is going so slow that you can all get on. So I say to you, country photographers, that want to improve your work, board the slow train. (Applause.)

President Nussbaumer: At the first day's session an amendment of the Constitution was presented, which it is in order to bring before the convention at this time. Mr. Reeves has that matter in charge.

Mr. Reeves now read the proposed amendment to Sections 2 and 3, Article II., of the Constitution, and also the original sections which he proposed to amend, as fully set forth at the morning session on Tuesday.

Mr. Bellsmith: I move the adoption of the amendment as reported.

The motion was seconded and stated by the Chair.

Mr. Holden: In taking up the consideration of this question we, as photographers, who produce photographs or pictures out of the material manufactured by the manufacturers, should stand in a position of absolute independence. (Applause.) They in themselves should have the liberty to do as they please. (Applause.) I think this, that to curtail the action of the membership of this Association, who are photographers, to curtail their free action by any interest which may be selfish or mercenary, would be doing wrong to every man who works behind the camera; consequently I trust that every member will stand strong and firm to let the Constitution remain as it was. (Applause.)

Mr. Ryder: I, as one of the organizers of this Association, will say that, when organized, it was a photographers' Association, to be ruled by photographers. Of course we were very glad to have the countenance and assistance of the merchants in photographic materials, and all that. I think the present showing here under the old Constitution is an argument in itself. I cannot approve of giving a vote to clerks, porters, or whoever it may be, in the employ of the manufacturers or merchants, and I do not approve of the amendment. (Applause.)

Mr. Bellsmith: If I understood the amendment, it only curtails our power but slightly. If I understand the amendment, Mr. Reeves, it only gives the representatives of the different manufacturers a vote as to change of location, does it not?

Mr. Reeves: I will just read it again, so you can get it: "Associate members shall have all the privileges of the Association, but shall not be entitled to vote, except that each business firm represented shall have one vote upon location or place of meeting."

Mr. Bellsmith: Now you understand, ladies and gentlemen, that any member who has filled an official position and knows something about the management and handling of the convention, knows that we rely a great deal upon the support of the dealers and manufacturers to make our meetings a success—to a very great extent. Now, it is only right that we should give them a voice in the location. As far as other matters are concerned, the proposed amendment does not interfere with our old relations; but I think that they should have this small concession

made to them, as it is a matter of business that they have to go to the place that is selected. I think it is only fair and best for all concerned, right and just, that they should have some little word in the matter of selection of location of the convention.

Mr. N. L. Stein: While I coincide with our own members that the Association shall have exclusive rights, I do not exactly coincide with them that the manufacturers should not have a voice, at least, in this little affair. We are here assembled probably in the proportion of two hundred, where the manufacturers have thirty, and may be not that many—a drop in the bucket. At the same time the money that they pay the Association is a little more than a drop in the bucket. I think that it is a little bit—just a little bit—of return for that money. It is not much that they ask. They ask it more as a matter of courtesy than anything else. If we do not want to go where they wanted to go, they cannot take it there, because we have the majority. Give them that privilege. It is all they ask, and I think it is no more than just to give it to them.

Mr. Moore: Don't you think the precedent a bad one? (A voice: "Yes, sir.") Some years ago many of us here present will remember there was an association of manufacturers of photographic goods and dealers. Did any photographer ever ask for admittance into that association or ever ask for a voice on its floor? (Applause.)

Mr. Steadman: I would simply like to ask a question. Is it possible, parliamentarily, to allow one class only of associate members to vote on this question without making any provision for the other classes of associate members? Would it be possible to grant it? I do not know. We know that the associate members may be composed of the houses themselves, of their employés, or of amateur photographers. Can we do it?

President Nussbaumer: Your point is well taken.

Mr. Bandtel: For what firm will the amateur photographer cast his vote?

President Nussbaumer: The article as amended there will have particular bearing upon the firms represented by exhibits on the floor, as I understand the matter—people who are active contributors at that time.

Mr. Ettinger: I do not quite see the animus of this thing. It is a little strange to me. Of course we like these people—like to have their friendship, and all that—but it does seem to us people from the West that as long as the manufacturing interests are largely in the East that maybe hereafter they will want this thing to be held in the East. Now, once in a while we would like to have you come West. It seems to me, in all fairness they ought to let it go where the photographers want it. (Applause.)

Mr. Reeves: I would suggest that, in view of the fact that many here were not present at the Tuesday meeting, that the petition that was handed in, requesting this action to be taken, be again read in order that all may have a proper understanding of the matter.

President Nussbaumer: That is impracticable at this time, because the paper has been left at the hotel.

A member: It would seem to me that the manufacturers must have worked in unison in this matter when presenting that petition. Should we not hear from some one who signed that petition as to what definite object they had in view in asking for this? They must have had a definite object. It seems to me it would be only frankness on their part if some one of the material men who signed this petition would tell us what was the definite object sought to be accomplished.

Mr. Potter: I believe in this policy, always to be brave enough to do the fair thing. I do not think that these manufacturers have any selfish, mercenary, or any other motive that would be against the interests of the photographers. I think we can put them on their honor. They give largely to this Association. The financial success of the Association depends largely upon these men. Now, I do not blame them for wanting to have a little say as to the selection of location. Somebody said there were probably two hundred of them. Suppose there are two hundred. If those two hundred can control us they ought to be our leaders. (Applause.)

President Nussbaumer: Article 5 of the Constitution provides that "The Consti-

tution may be altered or amended by a vote of three-fourths of the members present at any regular meeting, and notice to alter or amend the same shall be given at least one sitting before a vote thereon." That section has been complied with in this case. Are you ready for the question? (Cries of "Question.")

Mr. G. Cramer: I will say a few words in regard to this matter. This rule of confining the votes to actual photographers was adopted some years ago in St. Louis. It has worked very well so far. I do not see any reason for altering the same. (Great applause.) I think the photographers ought to choose where they want to go, and wherever they please to go the manufacturers will follow. (Applause.)

Mr. Potter: From what you say it appears that you are willing to trust us.

Mr. Cramer: I don't want to be considered as an outsider. I have been in photography myself over twenty-five years. I am speaking in behalf of the Association. (Applause.)

Mr. Schlesinger: I take it for granted that at the time when those rules were adopted the photographers had very good reason for not giving the manufacturers a vote. The photographers met in convention for their personal benefit—their personal improvement, to assist each other in bettering their work and their conditions. The manufacturers and dealers come here because the photographers are here, and in order that they may sell their manufactured product to them; and I would think it would not make any difference where the photographers would go, for, as Papa Cramer says, the manufacturers will follow you. Supposing the meetings are poorly attended by the photographers and the manufacturers were strongly represented, and the manufacturers wanted to take the convention to a place inconvenient to a majority of the photographers, it would work badly. I think that the Constitution should be left as it is. There is no danger that the manufacturers and dealers will fail to attend the National Convention, but there is great danger that you will keep a great many photographers away who cannot afford to go to such a great distance. I hope that the Constitution will remain as it is.

[Question, being again called for, was put to vote by the Chair and failed to carry, the vote in the negative being almost unanimous and eliciting much laughter on account of its insignificance.]

President Nussbaumer: It has been stated earlier in the meeting that the selection of next place of meeting would be taken up at a time when the largest number were present. It is now in order and we will entertain propositions.

Mr. G. Cramer: As I came in at the door I saw a sign reading, "San Francisco, 1904." I move that it be made, "St. Louis, 1904." (Applause and laughter.) We are going to have the greatest World's Fair that was ever held, and we want you to come and see it. It may be true that it will distract somewhat from your meetings, but what does that matter? You will have a chance to see the finest work from all parts of the world—not alone from the United States, not alone from the past masters in the profession here, but elsewhere—in photography, in art, and in all other branches of science. You will see the very best. You do not want to miss this opportunity. Not every one of the members of the Association has a purse long enough to attend two meetings in a summer, so you might as well combine the two in one and go to St. Louis in 1904. (Applause.) I am sure that you will receive a welcome and that you will enjoy your stay in our old St. Louis at the World's Fair. (Applause.)

President Nussbaumer: Before proceeding further in this matter I find I have neglected to call for a report from the committee which was appointed to prepare a memorial upon the death of Brothers Guerin and Wilson. We will now have the report of that committee.

Report of Obituary Committee.

Mr. Bellsmith: Your committee beg to offer the following report. As there were two names mentioned we drew up two separate resolutions, and, on behalf of the committee, I will read them, viz.:

IN MEMORIAM.—F. W. GUERIN.

WHEREAS, by the death of our former President, F. W. Guerin, this Association and the photographic fraternity at large have lost one of its

most honored members, and our art one of its most accomplished and brilliant workers—one who by his many estimable qualities, endeared himself to all with whom he came in contact, a man in the highest and truest meaning of the word, ever a leader in his chosen profession, broad-minded and sincere, he gave freely of his knowledge, thereby helping many individuals and the profession at large. He was truly one of the great masters of photography; therefore be it

Resolved, That this Association in convention assembled does hereby express its sorrow in the removal by death of our most distinguished member, and that our sympathy be extended to the bereaved family, and that the Secretary be instructed to forward to them a copy of these resolutions.

R. P. Bellsmith,
W. I. Scandlin,
Geo. B. Sperry.

In Memoriam.—Edward L. Wilson.

Whereas, it has pleased an all-wise Providence to take away from among us Edward L. Wilson, of New York; one of the founders of the National Photographic Association, of which this Association is the successor; one who, during his active life of forty years devoted to the service of the fraternity, accomplished many and great things for the honor and advancement of photography in America; and one who by the means of his numerous publications undoubtedly helped thousands of individual photographers to better their condition in life; therefore be it

Resolved, That we, members of the Photographers' Association of America in convention assembled, do hereby express our sorrow in the great loss we have sustained by his death. Be it further

Resolved, That we extend our sincere sympathy to the bereaved family, and that the Secretary of the Association be instructed to forward to them a copy of these resolutions.

R. P. Bellsmith,
W. I. Scandlin,
Geo. B. Sperry.

Mr. N. L. Stein: I move, Mr. President, that the report be received and adopted, and that, in respect to the memory of our departed brothers, a rising vote be taken.

The report was thereupon accepted and adopted by a rising and unanimous vote.

Mr. Rösch: I would suggest that the Association order that the two sets of resolutions be engrossed in a proper manner, and not simply written in typewriter upon letter-head and mailed, but that they be prepared by someone competent to do the work of engrossing in a skilful and proper manner and carried to the families of our departed brothers.

President Nussbaumer: The Secretary will now read propositions for place of holding the next annual convention.

Secretary Holloway thereupon proceeded to read at length the invitation and letter accompanying the same received from Mr. T. W. McCreary, Hotel Victory, Put-in-Bay. The reading was interrupted by a motion offered by Mr. Holden that all advertising matter be omitted in the interest of saving time, and that the names of places only be given and parties signing the invitations. (Seconded by Mr. Hays and adopted.)

Secretary Holloway thereupon announced that he had received letters of invitation from the following, viz.:

John A. Ockerson, Chief of Department of Liberal Arts, World's Fair, St. Louis; D. R. Francis, President Louisiana Purchase Exposition, St. Louis; Rolla Wells, Mayor of St. Louis; United Improvement Company, St. Louis; C. P. Walbridge, President Business Men's League, St. Louis; W. F. Randolph, Secretary Asheville Board of Trade, Asheville, N. C.; B. M. Jones, Acting President Board of Trade, Asheville, N. C.; M. R. Beard, Secretary Sacramento Chamber of Commerce, Sacramento, Cal.; Sacramento Valley Development Association, Sacramento, Cal.; Ferd. K. Rule, President Chamber of Commerce, Los Angeles, Cal.; E. F. Olmsted, Secretary and Treasurer Bureau of Conventions, Niagara Falls; A. C. Paul, President Commercial Club, Minneapolis, Minn.; J. C. Hayner, Mayor, Minneapolis, Minn.

Mr. Webster: I desire to place in nomination a section of this country that has never yet had the honor of entertaining the National Convention; a section that is as large in area as this central section of the country. I desire to place in nomination the city that is the commercial as well as the geographical centre of that section. I have invitations, Mr. Chairman, from different boards, including mayor of San Francisco, the California State Board of Trade, the Chamber of Commerce of San Francisco, etc. We extend an invitation, also, from the Photographers' Association of California, adopted by unanimous vote of that Association, that you meet in San Francisco in 1904. We feel that we can do our share, at least, to give you an interesting meeting, and that your Association will not lose by coming to San Francisco. It has [not?—Ed. W. P. M.] been the

experience of other conventions that it was a losing proposition for them to hold their national meetings in San Francisco; on the contrary, they have held successful and largely-attended conventions there. We have all facilities—hotel, street-car, etc.

President Nussbaumer: I am sorry to curtail your proposition, but really, in justice to the action taken with respect to the others, you are out of order.

Mr. Webster: I place in nomination San Francisco.

Mr. Snow: I place in nomination Minneapolis. Seconded.

A member: I wish to place in nomination Chicago.

Mr. Rösch: I believe it has been customary to nominate the various cities and then take a vote. If you will permit me I will nominate St. Louis.

President Nussbaumer: I will appoint as tellers Messrs. Bellsmith and Hays.

Mr. Stein: I move that the Secretary be instructed to cast one ballot in favor of Minneapolis. That will stop the whole business.

President Nussbaumer: You are out of order.

Mr. Rösch: You have heard our old friend and supporter, Papa Cramer, say that he wanted the Convention to come to St. Louis. Now, I will not take more than two minutes, and I will say this: You know the hospitality of St. Louis. We will take proper care of you. The only fact which seems to be against St. Louis is that the World's Fair is to meet there that year. Now, cannot we sacrifice some interest in the Photographic Association for one year?

(A voice: You are out of order.)

President Nussbaumer: The customary manner of voting is that the vote be taken by ballot, and the place receiving the highest ballot is the place decided on. Votes will be accepted only from members who wear active-membership buttons.

A member: Minneapolis wishes that the selection be made fairly, and that the vote be taken in fairness to all the cities named.

President Nussbaumer: There being no further nominations, the tellers will proceed to collect and canvass the ballots. While this is proceeding Mr. Cramer, Past President of our Association, has a few words to say to us. I will give him five minutes.

Mr. Cramer: Will you keep time for me?

President Nussbaumer: Yes, sir; I will. (A voice: "Take him up on the platform.")

Papa Cramer addressed the convention as follows:

MR. PRESIDENT, OFFICERS, LADIES AND GENTLEMEN: I am very glad to be with you and very glad to see such a good audience here. The attendance is as good as we have ever had. I appreciate what it is to be among friends. I have just come from a long and tedious journey and on the way I was entirely among strangers. I had the sleeping car all to myself, because people are going to the summer resorts now instead of coming back from them. But I will tell you, I felt different to be among strangers or strange faces than among friends and acquaintances. That is the beauty of our National Convention, that it brings friends together from all parts of the Union; and for that reason I have always thrown my influence to keep up the National Association of Photographers, as we have it now. It may be all right to have State Conventions, but they can never take the place of the National Association. I have just come from a beautiful section of our grand country, where there is fresh water and fishing in abundance. I am going to tell you a fish story now. (Laughter.) I heard Brother Collings advise you to bait your hook, but up there where I was it is not necessary. You can catch fish without bait; all you have to do is to get one of those little spoons and troll along in a skiff and the fishes, not having as much sense as photographers, will just go for it without mastication, so that you will have them on the line and you cannot even get away from them. I would take this opportunity to tell you that you must take a trip to that beautiful Georgian Bay, north of Lake Huron. Whoever is a friend of nature and of fishing will find all he wishes there. The friends with whom I have been, on Commodore Steffin's yacht, all send their kindest regards and regret that they cannot be with you, but they like it up there too well. It was mighty hard for me to leave them, but I thought I must be here, and here I am. (Applause.) I am very thankful to you for this cordial reception. It is highly appreciated. It does me good that you all call me "Papa." (Laughter.) If there is anyone here that has not his number yet, he may apply to me and get his number. There are over 1300 of them out. President Roosevelt has one of them. When he was in St. Louis I had the honor of riding with him in a carriage to an entertainment we had there, and I have adopted him as one of my sons.

Now, in regard to the selection of the location, although that is settled by this time (here Papa Cramer slyly looked over the shoulder of the tellers, who were seated behind him). (Laughter.) I will make a bet on St. Louis 3 to 1; if anybody will take it, they are welcome. (Laughter.) It would not behoove me to go to betting, but I have been among the boys and they have got me spoiled now. Well, if you will come there, it is hardly necessary for me to say you will all enjoy your stay and will find the Fair highly interesting. I will take this opportunity to draw your attention to the grand preparations being made there. They are going to excel anything ever held in that line.

even in the Chicago Exposition, which was a very grand affair, as we all know. Judging from the work as it has proceeded thus far, the size and style of the buildings and arrangements indicate that it will excel everything ever offered in the way of a World's Fair, and there will be attractions offered which are well worth seeing by all and everyone of you. So I expect surely to see you all there next year at the World's Fair in the next Photographers' Convention. I thank you. (Applause.)

Mr. Todd: What's the matter with Papa Cramer that he has not given us his greeting? Let's all give it. Come on. "I am so happy!" Come on! "I am so happy!" Now, papa, you do it.

Mr. Cramer: The audience has not given you an answer. Now, I will ask you, "Are you glad you are here?" and your proper answer is, "I am so happy," and raise your hand. "Why are you here?" "I am so happy!" (The house responded with a general cry, "I am so happy!" which provoked great laughter.)

The tellers having now counted the vote, Mr. Bellsmith reported the same, as follows: Minneapolis, 33; Put-in-Bay, 6; Chicago, 16; San Francisco, 16; Los Angeles, 0; Asheville, 1; Sacramento, 11; Niagara Falls, 1; Louisville, 1. Oh, by the way, I see St. Louis has 237. (Laughter.)

President Nussbaumer: The election of officers is the next order of business. We will hear the report of the Nominating Committee.

Secretary Holloway read the report of the committee, as follows:

Report of Nominating Committee.

We, the undersigned Nominating Committee, beg to report the following nominations for officers:

President, C. R. Reeves, Anderson, Ind.

First Vice-President, Charles W. Hearn, Boston, Mass.

Second Vice-President, C. J. Van Devanter, Decatur, Ill.

Secretary, George C. Holloway, Terre Haute, Ind.

We further suggest and recommend that the President appoint State vice-presidents from different parts of the country to forward the interests of the Association in their respective States.

Respectfully submitted,

JAS. F. RYDER, Chairman.
J. M. BANDTEL, Secretary.
FRANK MEDLAR,
W. STEPHENSON,
H. G. SCHWARZER.

A motion was made to adopt the report as read, and to empower the Secretary to cast the unanimous vote for the election of the nominees reported. The Chair immediately declared the motion out of order, and announced that the office of President would first be balloted on.

President Nussbaumer: Are there any other nominations for president?

Mr. N. L. Stein: I move that nominations for president now close. Carried.

M. Snow: I move, Mr. President, that the rules be suspended and the Secretary be directed to cast the ballot of the convention for the election of Mr. C. R. Reeves, of this Association, for 1904. The motion being unanimously adopted, Secretary Holloway so cast the ballot.

President Nussbaumer: Mr. C. R. Reeves is accordingly elected President of the Photographers' Association of America for 1904. (Cries of "Speech! speech!")

MR. PRESIDENT AND FRIENDS: Remembering Mr. Scandlin's anecdote the other day about raising turnips, it occurs to me that there have been a great many dollars spent in learning to raise turnips, and this has been a mighty hearty pull for such a little turnip. (A voice: Good.) I wish to preface my remarks by telling a little story. In the good old rural district of Eastern Indiana there was an agricultural man and his son who had an ambitious colt to break. The old gentleman proposed to ride it, and he said, "John, I will get on the colt, and you go down the road and hide behind that stump, and when I come by there you jump out and boo at the colt, and we will teach it to not get scared." (Laughter.) Well, John took his position behind the stump; he was very anxious to help break the colt. When his father reached the spot selected the son jumped out and yelled "Boo!"—and the colt threw the old man! He got up rubbing his shins and said, "John, didn't you know that was too big a boo for a colt?" (Laughter.) I wish to say that the kind of "boo" you gave me would break any colt. The colt is certainly broken. He will wear the harness; he will labor hard and faithfully to perform the duties which you have assigned him. He feels proud to wear harness saddled upon him by such people as constitute the

members of this Association. This is the proudest moment of his life. Sometimes when we are laboring for a cause in which we have been working long and hard and no ray of light seems to come to guide us, and it seems a little bit difficult to continue, yet we continue on, and after the labor is performed we see its results and we enjoy the appreciation with which it is accepted. We feel that the labor has not in any measure been too great and we go forward and gladly take it up again and endeavor to do our utmost to carry it on to a grander result. Now, I know you will give me good assistance, and I can promise you that in our efforts for the coming year we will attempt to show you results that you will not be ashamed of.

As I said before, I wish to thank you, and thank you heartily. I appreciate the honor which you have conferred upon me. I feel that it will help me to be a better man. I feel that it will be a sustaining grace to me in my declining years to look back and remember that at one time I have had the confidence of the good people who compose this Association; and when my days of usefulness are over, I hope that I can feel that I have fulfilled my duty. I thank you. (Applause.)

President Nussbaumer: The next order of business is the election of First Vice-President. Mr. C. W. Hearn is the regular nominee.

Mr. Bolton: I wish to second the nomination of Mr. Hearn, and want to term him the war-horse of the New England Convention; a man who, whether in office or out of office, for the past seven years has worked zealously and earnestly for the people of the New England Association and the profession in that location; a man who, after he took office, worked faithfully and valiantly day and night for the success of that institution, an institution which I am proud to stand before you and say comes closely following the National. I have worked with Mr. Hearn as his secretary. I have worked with him as State Vice-President, and I can say that if you would have gone to his studio or his home any time between the hours of 7 o'clock at night and 2 in the morning you would have found Charley Hearn hard at work for the interests of the New England Convention, so much so that his wife said she did not know whether she had a husband or not. He has become thoroughly familiar with Association work and he has its interest at heart, both that of the New England and the National.

Mr. Schlesinger here interrupted the speaker by suggesting that everybody was satisfied with Mr. Hearn, and there would be no opposition to him.

On motion, nominations closed, and on further motion of Mr. Sperry the Secretary was directed to cast one ballot for the election of Charles W. Hearn to the office of First Vice-President.

Mr. Nussbaumer thereupon announced Mr. Hearn duly elected to said office. ("Speech! speech!"]

Mr. Hearn: I wish to state to the members of this Association my appreciation of the honor you have paid me. I would further say that if I am spared to the office I will be most happy to serve Mr. Reeves as his clerk. During the past year I have been in close touch with Mr. Reeves and have tried all I could to help him, because I esteem and like the man. I have liked him for years, ever since I first knew him and saw his little pictures. I loved them then as I do to-day. The Vice-President should assist the President in any way that he can to forward his administration and his success. This, I assure you, I will try at all times to do. (Applause.)

Mr. Reeves: Allow me to make public acknowledgment of my appreciation of the esteem in which our honored Vice-President holds me, and I publicly pledge my earnest support to him.

I wish to make a correction in my name. It is not Charles. I take this opportunity to make the correction because sometimes my mail comes wrongly addressed. My initials are C. R., but the first name is Cicero.

President Nussbaumer: The next order of business is election of Second Vice-President, the regular nominee being Mr. C. J. Van Devanter, of Decatur, Ills. Are there any other nominees for the office?

Mr. Smiley: I arise to second the nomination of Mr. Van Devanter. While I could say much more in his behalf, I will only say now that he is one of the Past Presidents of the Illinois State Association, having at one time been also its Treasurer, and he filled both offices with marked ability. He was advanced to the Presidency of the Illinois Association two years ago by unanimous vote, and was this year again elected unanimously. If in order, I move that we suspend the rules and that the Secretary be empowered to cast one vote for Mr. Van Devanter as Second Vice-

President of the Photographers' Association of America.

President Nussbaumer: Nominations are not yet closed.

On motion of Mr. Ettinger, nominations closed, and, on motion, the rules were suspended and the Secretary directed to cast one ballot for the election of Mr. C. J. Van Devanter as Second Vice-President.

Secretary Holloway: I take great pleasure in casting one great big ballot for Mr. Van Devanter. (Applause.)

The Chair thereupon announced the election of Mr. Van Devanter as Second Vice-President, and stated that the next business in order was the election of Secretary, Mr. George G. Holloway, of Terre Haute, Ind., being the regular nominee. (Applause.)

On motion of Mr. Sperry nominations closed.

Mr. Bolton: I move that the President cast one vote for the election of Mr. Holloway as Secretary of this Association. Seconded.

President Nussbaumer: I will accordingly deposit the ballot of this convention for the election of Mr. George G. Holloway, and announce him as elected to the office of Secretary for 1904. (Cries of "Speech! speech!")

Secretary Holloway: My friends, when I look around me and see these faces, and then look at my watch and see what time it is, I at once associate the time with the look upon your faces. You look hungry, and I will not take up much of your time. You all know, I am sure, that things done are better than promises. I am not going to make any promises to you, but I am simply going to ask you to watch my record. I thank you! (Applause.)

President Nussbaumer: Owing to the lateness of the hour we will be compelled to postpone the talk on lenses by Mr. Deardorff until to-morrow morning. The first thing this afternoon will be the talk by Mr. Steadman.

Mr. Steadman: I simply want to give you a personal invitation to be here at half-past two.

The convention thereupon adjourned until 2.30 P.M.

THIRD DAY—AFTERNOON SESSION.

The convention met pursuant to adjournment, President Nussbaumer in the chair.

President Nussbaumer: I am sorry not to see more people interested in this meeting, but I am sure those present will feel well repaid for having come in.

The first number on our programme is a "Talk on Home Portraiture," by Mr. F. M. Steadman.

Address by F. M. Steadman.

MR. PRESIDENT, MEMBERS OF THE P. A. OF A., LADIES AND GENTLEMEN: In speaking on the subject of "Home Portraiture," I am tempted first to give you my opinion of portraiture as a whole.

I believe that the day will come when there will be no discrimination between portraiture of one kind and portraiture of another kind; that is to say, normal portraiture, so far as lighting the face and the preparation of the actinic conditions is concerned, is a matter governed by natural geometrical principles which, when observed, will produce a correct portrait so far as these elements are concerned. These are truths for the *artisan* to know and to handle; the work of the *artist* is not now under consideration.

It matters not whether one is under the gallery skylight, or under a home window, or whether working under the Western sunset light, or in a deep cañon or a grove where the light is concentrated by an opening in the forest, conditions will be subject to the natural laws of geometry and of the actinic power. If there is any one in the world who should know these laws it is the man who uses light in taking portraits as a professional photographer.

But the day is coming when the amateur as well as the professional will know these laws and use them in the taking of portraits. He is learning them to-day, and the professional photographer should be very careful that he is the first to know and utilize these laws in order to obtain business advantage by their use.

If it is conceded that my exhibits of portraits, which you will find in the Foreign Exhibit, is normal portraiture, then it follows that home portraiture is practical in ordinary professional work. The question then is, not can good work be done at home, but does one know how to utilize home conditions so as to produce normal portraits?

I want to make this talk as practical to you as possible from the standpoint of dollars and cents; at the same time I wish to state in very few words those underlying principles in nature to which I have just referred.

Portraiture depends principally upon three specific natural conditions; these are, first, the radial expanse of the light source in relation to a certain point on the subject illuminated. The point on a plane surface which is held horizontal may be imagined to be illuminated by the complete dome of the sky, which dome may be geometrically represented by a half-sphere placed down on to a plane surface over the point which is illuminated. This half-sphere would intercept any ray of light coming from any point of the sky to shine upon a point under the sphere, and if one-

half of this sphere be removed light from one-half of the sky can shine upon the point. If one-quarter of the sphere only be removed light may come from one-fourth of the expanse of the sky to shine upon that point; and so on.

Thus it is seen that the mental picture of a light source as it creates intensity at a certain point on a surface is the base of a cone of light rays, the point illuminated being the point of that cone. Then in order to establish a unit for this character of radial space it is only necessary to decide on a certain fractional part of a complete sphere, which fractional part will become the base of a unit cone of rays.

An illuminated point on a plane surface is confronted by an amount of radial space equal to a half-sphere; but as an illuminated point recedes within an opening the amount of radial space is gradually lessened, and at any certain point within that opening the opening, considered always as the base of this light cone, will always have an exact radial value expressible in simple units of radial space.

So far as the concentration of light is concerned, the photographer cannot do better than read *Artistic Lighting*, by James Inglis, which teaches us the value of a concentrated light source as opposed to the common method of working under the ordinary skylight, in which the base of the illuminating cone is too extended, falling as it does on a face from so many different directions that there is created no simple design of light and shade upon the face. These conditions tend to produce flatness instead of modulation on the features.

The second element in normal portraiture is the position of the head in relation to this concentrated source of light. To easily determine the position which is approximately correct, turn the face first directly toward the source of light so that both sides of the nose are illuminated by that source. Then gradually turn the face away until one side of the nose is thrown into shadow. Near to that point is the condition of lighting which is used in 90 per cent. of all the portraits which are made for the sake of the likeness principally, whether painted or made by photography.

The third element in normal portraiture is the condition of contrast which exists on the subject. This contrast must be modified by reflectors, being careful that the reflector be not dropped below the altitude of the face in order that this secondary reflected light may fall slightly from above, for the same reason that direct light should come from above, simply that the true modulation may result.

Now, a practical word with reference to degrees of opacity. I would like to ask any photographer present what percentage of the light of the sky a clear glass in a common window takes away from it; that is, suppose a face to be lighted through a simple opening without glass, and then that a common window glass be placed over that opening, what percentage of the actinism of the sky is taken away by the glass as in the second condition? (The lecturer waited a moment for response from the audience, but no reply came to him.) I hear no response; and that brings out a point I wish to make, viz., that you have perhaps never investigated and therefore do not know how to answer this query. We, as professional photographers, should be prepared to answer such a question; and if we do not know what percentage of the light of the sky is taken away by our skylights, it is high time that we should take steps to determine this and all such questions which pertain to photographic practice in this regard. During the few days of this convention I have had in private conversation the opinions of several of our members on this subject, that from 5 per cent. to 15 per cent. of the actinism was taken away by the intervention of the clear glass of an ordinary window. The truth is, that one may tint a piece of printing-out paper on the inside sill of a window for ten seconds, when the window is removed; whereas if we lower the sash to its place and make the exposure, we will find that thirty seconds will be required to produce the same tint. Then if the light works with one-third the rapidity, it is clear that two-thirds of its actinic power has been removed.

To measure in like manner the opacity of any skylight, simply tint a piece of printing-out paper a certain number of seconds outside of the skylight and facing the pure sky. Then immediately under the skylight and close up to it expose another piece long enough to produce the same tint. Ten seconds taken as the numerator, and the number of seconds required to produce the same tint under the skylight taken as the denominator, will form the fraction representing the actinic value of the skylight as compared to the pure sky as a unit. Thus, if sixty seconds were required to produce the desired tint under the skylight, that light would have 10–60, or one-sixth the value of the pure sky; that is to say, five-sixths of the value of the pure sky is removed by the material which composes your skylight.

It is evident, therefore, that if we substitute pure skylight for the gallery condition, we have increased to a wonderful extent the working power of our light source. The long-established custom of working under a skylight makes it inevitable that a man should be surprised upon seeing such work done by a common window, since he never has realized how slow is the action of his gallery light in reality. From this we see that the extra force to be obtained from pure sky increases greatly the value on an illuminated face, and renders home portraiture thoroughly practical, so far as the time of exposure is concerned.

With the ordinary rapid rectilinear lens used at its full opening the normal exposure is frequently as little as one-fourth of a second, and seldom more than one second.

The tendency of the times among our best workers is to master all the intricacies of process, to the end that the mind may be perfectly free to approach the individuality of the subject and obtain a likeness which will properly present it. Many of our advanced workers have already eliminated the old style of top and side skylight. Pirie MacDonald is working with two common windows side by side in an ordinary room. Hollinger uses a side light only, but somewhat larger.

Actinism as an exact value, while it is the basis of photographic practice, is a thing to be known and measured by the artisan, and is entirely apart *as an exact value* from the work of the artist.

This is the reason that it must be known so thoroughly that the mind will use it automatically, for only when this can be done is the artist free to follow his own intuitions so far as the handling of the subject is concerned. The inch is necessary to architecture, but is not a factor in the artistic education of an architect; in like manner I make no claim that the unification of the photographic values will make an artist, although it is absolutely necessary to the worker as an artisan that such values be established. The best painters of the world lived before the fact of actinism was

discovered; and in a finished product, whether photographic or from the brush of the painter, it is not necessary that actinism should have entered as a factor into its construction. It is a fact, however, that a system of study for the comprehension of the light effects in nature by the mind may be based on the law of actinism, which law may bring the mind to an ever-increasing capacity to perceive and enjoy the varied operation of this law in nature.

The study of actinism, therefore, will sharpen the perception of both the painter and the photographer; but aside from this fact it is absolutely essential to the photographic worker as an artisan. The whole process of photography is a process of elimination of small difficulties; the beginner will fail in the simple act of focusing or locating an image.

Let us now come to the practical reasons why the professional photographer should learn to do home portraiture. A few years ago in Houston, Texas, my partner and I found a man making medium-sized portraits on Aristo-platino paper at thirty-five cents per dozen, and he was practically without work even at that price, and was sitting in his chair doing nothing. Several other photographers in the same place were in like plight. We decided to take our kodak to other parts, and went down an old historic railroad, the Columbia Tap, to the village of Columbia, and found that no photographer had visited those parts within the last fifteen years. We did a good business, and then went farther South on the Brazos River to another village which we worked with success; then continued to the mouth of the river to Velasco City, and at that point were very successful. This illustrates the condition which prevails in many places; and when one is free from the idea that a skylight is necessary to do good work he is at the same time free to go into any part or any adjoining village and successfully pursue his occupation. Furthermore, the exercise obtained in travelling from house to house, which may be done on foot or with a bicycle, and which may extend through the country if desired, is no small element of satisfaction in the general result.

The cost of equipment for this kind of work is ridiculously small compared to the income to be derived from an intelligent use of the materials. Furthermore, it is desirable that the professional photographer should learn to do home portrait work before the amateur has entirely wrested this field from him, and in order that he may reap the benefits to be derived from the work itself, and from the instruction of the amateur which the professional should always be able and willing to give as a matter of business.

The wider the dissemination of knowledge respecting the manipulating of photographic apparatus, and the more general is the love of photography as an art among the people, the more will the work of the true professional be valued at its proper rating; and thus it is seen that photography is by no means going to be undervalued or depreciated by the extension of home portraiture, but rather greater interest stimulated and aroused, so that the art will be dignified and the profession accorded a greater measure of remuneration for skilful and artistic work.

Much has been said by the resident professional photographer in condemnation of the "transient" worker; and the latter usually has deserved severe criticism for his price-cutting methods of competition. But it is well known that some of the most bitter "price wars" have been between resident professionals, and the question is in truth one of business methods, ability, and manhood, and not whether a man is established or transient. In our own practice we never have charged less than the best photographers in the place visited, except when first practising this method of working in Omaha, Nebraska. On the contrary, for the last six years we have charged more than the best photographers, and at the present time at least double his prices. They are usually our friends, and have many times been glad of our visit, as we have illustrated to their citizens that photographs should be well paid for. Our own standing as photographers has risen in proportion as we have been able to eliminate the anchorage of gallery methods and increase the quality of our work.

It is manhood, ability, and character that will make us respected, and the man who fears to lose his dignity by going into a home to take a portrait already must hold that dignity in a trembling hand. The doctor suffers no reproach by going to the home.

Again, by taking note it may be seen that of all the subjects which belong naturally to portraiture, a large percentage is brought to the gallery with the greatest inconvenience. It requires an actor to appear natural at a studio sitting, or else a strong and tactful man at the camera. Procrastination on the part of those who really desire portraits often keeps them away from the gallery for years. They could be caught at home with a ten-minute sitting. The ball dress, the baby, and the invalid suggest to us other reasons for home portraiture.

The professional also should make it known that he will finish the work of the amateur for a stated price. The item of retouching alone, when the practice of portraiture shall be common among amateurs, will be no small source of income to the professional photographer. If photographic practice among amateurs could be multiplied by 10, and the professional photographer could secure half of this work to finish, he would reap a net profit in which there would not enter any element of time consumed in receiving and waiting on sitters, posing, or playing monkey with the baby.

When photography was discovered it was thought that the painter would be the first to utilize it in his labors; but the painter soon found that the law of nature which impressed the sensitive film was something of which he, as well as the rest of the world at large, was entirely ignorant, and which could only be learned by a long and tedious process of experimental practice. For this he had neither aptitude nor intention, and so the employment of photography as an assistant in the painter's studio was by many painters derided. Furthermore, even up to the present time the practice of photography has necessitated certain fixed conveniences, it being understood that the sitter must come to the operator, and thus the skylight was established as a commercial necessity.

Up to the present date we have thought that experience was the only door to photographic practice; this is true simply because we have not dealt with the natural force of actinism as we have dealt with other natural forces; not having given it a simple unit and scale of measurement. Photographers have "guessed" long enough, and should begin to follow some exact and definite method of procedure. This by no means will strike a blow at art, which is always the handmaid of truth. No photographer can approach nature closely until he can go away from his skylight and work with perfect confidence in his knowledge of

the values with which he deals, measuring them as simply and as quickly as he would values of weight or volume.

The theory of existing exposure meters is that certain paper which discolors under actinic action shall reach a standard tint as indicated by a painted slip to which it is compared. Difficulty, however, is frequently met by the color not passing by exactly the standard color to which it should be compared. All this difficulty may be avoided by adopting some system of measurement, viz., that any ordinary printing-out paper should be discolored in the light to that point where it may be just plainly distinguished from the original color of the paper. This method places in the hands of every photographic worker the means of making simple measurements from day to day, as the slips of paper may be carried in an ordinary note-book and tinted through a small hole cut in the cover of the book.

I know that there are many old photographers who would feel, perhaps, humiliated at the bare suggestion that they require a system of more accurate measurement of light values; but who ever heard of a carpenter, or even an architect, being humiliated because he was daily dependent upon a rule?

In making this tint referred to the paper should be held behind the cover of the book, and at the point where the face is to be located, and turned directly toward the source of light. The paper should be exposed until the tint produced through the hole in the cover is *just plainly distinguishable* from the original color of the paper. The number of seconds required to produce that tint is the normal exposure in photographing the face in that position, provided diaphragm No. 16 be used in the lens, and any ordinary emulsion be employed as supplied us for use with any of the modern plates or films. If a certain emulsion be found to be overtimed by this diaphragm No. 16, diaphragm No. 32 may be used with that emulsion, giving the exposure indicated by the paper test. The lens should be carried about with the diaphragm always at the proper opening for the emulsion used. Then if a larger diaphragm is desired to be used in making the exposure for each number that it is opened, the exposure is reduced one-half; or for each number that it is closed the exposure is increased by two.

In actual practice no light is too strong to illuminate a face, so long as it does not inconvenience the eyes and thereby unfavorably affect the expression.

I wish to announce here that to-morrow afternoon at 2.30 o'clock I will demonstrate in a practical manner this method of working by a common window, and will make the measurement of the light, expose a roll of film, and develop the same in the developing machine. I hope to see as many of you as possible present at that time, and would like to have you all examine the pictures on display in the Foreign Exhibit to which I have referred.

At the conclusion of the address of Mr. Steadman, which was listened to with close attention by the audience, President Nussbaumer introduced the well-known art critic, Mr. Lucius W. Hitchcock, of Buffalo, N. Y., who delivered a lecture illustrated by lantern slides. As it would be manifestly impracticable to report the lecture in full without the accompanying pictures used, a brief résumé only will be attempted.

Address by Professor Lucius W. Hitchcock.

Starting out with the theory of variation being more agreeable than monotony, the lecturer first took up the idea of the variation of spaces, showing on the screen that a rectangle broken up or intersected with straight lines going in two directions only and giving like spaces is a monotonous figure as compared with the same rectangle intersected with the same two lines, but so adjusted as to give varied spaces. His next step was to vary the lengths of the lines, still however in only two directions. Then further on he showed a flat design where curved lines as well as straight lines were introduced, having thus all the elements that go to the making up of a good decorative design. Elaborating the same principle, the lecturer showed that space variation in a flat design is also applicable to a picture; in placing, for instance, a portrait into a given space it should be so placed as to get a pleasing space variation around the subject, not to always place the picture squarely in the middle of the boundaries. After illustrating this on the screen as applied to a single figure, the lecturer took up two-figure pictures, and showed how they would be subject to the same law of space variation, two figures giving more opportunity for this principle to be brought in play than one. He then took up a group of several figures, showing that more pleasing effects were reached by placing the various members of the group in irregular, varied spaces rather than to have them all equally separated.

The lecturer now branched off on to the subject of variation of line. The most monotonous line being of course the straight line, the most varied line we can think of is the compound curved line, laying the curves in two directions, thus producing the line of beauty, so called. This was illustrated by the lecturer in the human figure, which abounds in compound curves. After carrying this idea forward, he illustrated it in the handling of accessories to the figure such as clothing, drapery, etc. The lines of the skirt of a dress, the hands, and so on, should be in sympathy with this line of beauty. One and two figures were employed in illustration, and it was urged that with two figures the lines of each should reciprocally flow pleasantly and rhythmically into each other. This was carried into three and more figures.

The lecturer next referred to perspective, showing how it gives us depth by the sense of being drawn into the picture, which is pictorially pleasant. The next step is, instead of having the perspective, that merely geometrical effect that one gets when standing in the middle of a railway track—which is pleasant so far as it goes because it draws the eyes to a great depth—yet it is not pictorially attractive, because the long, unbroken lines of the railway track tend to monotony, and in this respect are not pleasant. The geometrical lines of your perspective should be accented here and there so as to bring the interest forward into the picture

Taking up more complex perspective, the lecturer showed that where several planes of perspective overlapped each other, having opposite vanishing points, the eye is led off first from one

side of the picture to the other. In that way there is obtained a much greater sweep and more beautiful curve. Proceeding, the lecturer spoke of the variation of light and shadow, showing that the light is one of the most important things in portraiture or, indeed, in any picture. In a dark picture the light spots will be employed to accent it, and in a light picture the dark spots will be used for a like purpose; so that in either case, if you wish to accent, in the dark picture you must be very chary of the way in which you splash around your white, and *vice versa*.

Concluding, the lecturer spoke of pictures of a purely dramatic character, cautioning his hearers not to try to get too many things in the same picture. He contrasted this character of pictures with those of a decorative character, where the dramatic quality is of less importance than the decorative feature of the arrangement, distinguishing between the two kinds of composition by examples on the screen.

The lecture was highly appreciated. At its close Professor Hitchcock was followed by an eager audience while he rapidly sketched out his ideas in criticism of the different pictures on display in the gallery.

After the delivery of Professor Hitchcock's lecture the convention adjourned until 10 A.M., August 7th.

On Thursday evening demonstrations were given as follows: Of Portrait Lighting by Flash Light, by Mr. C. H. Nichols; A Demonstration on Bromide Paper, by Mr. Hart, of the Eastman Company; and Portrait Lighting By Flash Light, by Mr. S. S. Pingree.

FOURTH DAY—MORNING SESSION.

The convention met pursuant to adjournment, and was called to order at 10.30 A.M. by President Nussbaumer, who read the following telegram: "Photographers' Convention, Indianapolis, Ind. From your meeting may many blessings flow! is the wish of boys on Yacht Sappho. *Steffens, Stein, Strauss, Benjamin, Reinhart.*"

The report of the Treasurer then submitted was as follows:

Treasurer's Report.

Cash on hand, January 1, 1902 . . .	$4379.54
Received from membership and dues, .	2196.00
" " Secretary	3239.25
Sale of Ladies' pins, ...	50.25
Received of Geo. M. Edmondson, . .	49.24
Refund from Trunk Line Association, .	17.00
	$9931.78
Paid on Vouchers 280–329, ...	4755.89
Cash on hand January 1, 1903,. .	$5175.89

Respectfully submitted,
F. R. BARROWS, Treasurer.

President Nussbaumer: The next matter of business is the report of the Committee on Resolutions, which will be read by its Chairman, Mr. Bandtel.

Report of Committee on Resolutions.

INDIANAPOLIS, August 7, 1903.

We, the Committee on Resolutions, have the honor to report the following, and recommend for adoption by a rising vote, viz.:

WHEREAS: The Twenty-third Annual Convention of the Photographers' Association of America has proved in all respects one of the most successful meetings in the history of the Asociation, and it is proper that honor be paid to whom honor is due; therefore, be it

Resolved: That the thanks of the Photographers' Association of America be and they are hereby tendered to the following:

To Honorable Winfield T. Durbin, Governor of Indiana, and to the other participants in our convention programme;

To the officers and members of the German Club, for courtesies extended in securing the use of their building for a convention hall;

To the H. Lieber Company, of Indianapolis, Ind, for their generous entertainment at the German Club on last Tuesday evening, and for the many courtesies extended by them to this Association;

To the people of Indianapolis, for their cordial hospitality which has been so freely in evidence on every hand;

To the Manufacturers and Dealers, who have by their constant support and encouragement contributed so much to advance the interests of this Association and to add to the comfort of its members;

To the local press of Indianapolis;

To the Indiana Association Orchestra;

And finally, our most heartfelt thanks to the officers of the P. A. of A., who have so successfully and with such untiring and unselfish labor administered the affairs of this Association during the past year. *And be it further*

Resolved, That the future policy of the Association be continued on educational lines, and that no prizes be offered at its conventions.

That the invitation of Col. Ockerson be accepted and recommended for adoption;

That the President appoint a member of this Association to serve on the Committee of Review and Selection of the pictures to be sent to the World's Fair at St. Louis in 1904, said member to be appointed in accordance with the wishes of this Association.

That the proposition of the Winona Lake Association to the photographers of America be taken up and given due consideration.

That we heartily endorse the issue of the *Association Review*, and recommend an issue on similar lines for the next Convention.

Respectfully submitted,
J. M. BANDTEL, Chairman.
W. H. POTTER,
CHAS. W. HEARN,
Committee.

On motion of Mr. Bolton, the Report of the Committee on Resolutions was adopted by a rising and unanimous vote.

President Nussbaumer: According to the tenor of the resolutions just adopted, the next matter of business will be the selection of a representative on the Board of Selection for the St. Louis World's Fair, to pass on the pictures submitted there. What is your pleasure in this matter?

Mr. Reeves: Mr. Secretary, in due consideration of the services which our worthy President has given us in carrying to a successful issue the affairs of this Association, I desire to place in nomination Mr. J. George Nussbaumer.

The motion was seconded by Mr. Schneider and Mr. Rösch simultaneously, and was unanimously adopted. (Applause, and cries of "Speech! Speech!")

Presentation to Retiring Officers.

Mr. H. A. Collings: A few minutes ago I was informed that a little something different than labor and burdens were to be put on your shoulder, Mr. Nussbaumer.

I know of no more opportune time for the photographers and manufacturers of this Association to express their respect for you and their appreciation of your efforts and the kind and gentlemanly way in which you have conducted affairs than to present to you now this little token.

Remember, that it is not given because of its intrinsic value, but we ask that you will always prize it as coming from your friends. (Applause.)

Mr. Giffin, the same words that I have applied in reference to Mr. Nussbaumer are also applicable to you. (Applause.) We ask that you will accept this token from the photographers and manufacturers of this convention, with the kindest feelings toward you.

(At a given signal, a white covering was now lifted, exposing two beautiful bisque female figures, holding electric lights, the lights being also suddenly illuminated. The blushing recipients of these handsome gifts were called upon for a speech.)

Mr. Giffin: I think it is up to Mr. Nussbaumer to make the speech. (A voice: You can't get away from it. Another voice: I think it is up to both of you.)

Mr. Nussbaumer: Mr. Collings, Ladies and Gentlemen: Years ago I had an ambition to achieve something. It was my ambition to do and be recognized in the field in which I was engaged. I have made an earnest endeavor in every way to do what is right and legitimate and to uphold the high standard that has been set by my predecessors in this office. When my name was first proposed for the office of Secretary, I considered that I had received a very high honor. My advancement to the Presidency of this Association has been even more gratifying to me; but the kindness and courtesy shown to me and the support of the officers in every way in assisting my every endeavor are something that I must mention at this time.

The success of this convention has been due to you in every way, for your contributions to our art gallery, and for your support in coming to the meetings, and the attendance you have so kindly given to all our lecturers and to the kindred interests of this Association. This token of esteem is most flattering. Words fail me to express my feeling to you. That you have endeared yourselves to me by your support and by this added token of your regard is needless for me to say. You all know it, and you know that I have your interests at heart and that whatever I say is merely empty words so far as expressing my true feeling in this matter. Gentlemen, I thank you. (Applause, and cries of "Giffin!" "Giffin!") (A voice: "Get up on the stage; you are big enough!")

Mr. Giffin: I do not know what to say. This has come to me in the way of the biggest surprise of my life, and I do not know how to express myself because I do not know for what reason it is bestowed. It surely has not been because of the efforts that I have put forth in the Association. (A voice: "You are not too full for utterance!") This is my first time to serve as an officer in the Association. I have tried in my weak way to do the best I could, and this little token which you have this morning presented to me makes me feel that I have been appreciated. (Applause.)

President Nussbaumer: Mr. Ryder finds that he will have to leave us at this time, and before going he wants to say a few words to you this morning.

Mr. Ryder: I said the other day that I was glad to be in Indianapolis. I have been glad every day since, and I am still glad; but I have to leave you, and must now make some little preparations for my leaving. I am very happy to have met so many friends and made so many new ones, many whom I did not know, but who knew me. This has been a constant pleasure to me. I thank everyone who has shown me their courtesy and friendship as you have. Now I will say good-by to you all. (Applause.)

At a gesture from President Nussbaumer the audience now rose in respect to Past President Ryder, and the members came forward and pressed around Mr. Ryder and gave him a most flattering ovation and many hearty handclasps. This pleasing incident concluded, the business of the convention was resumed.

Mr. Holden: Yesterday there was a matter of correspondence brought before the Association from the Winona Lake Assembly. I move you that that matter be taken from our files and brought before the convention for further discussion and consideration. Carried.

President Naussbaumer: Mr. Reeves, I believe you have had that matter in charge, and I will ask that you again read the proposition from the Winona Lake Association. I think that it will be necessary for us to hear it read again, in order to act upon it more intelligently.

Mr. Reeves now read the proposition which was read by him heretofore during the first day's session, accompanying the reading of the same with some explanatory remarks of the same tenor and character as he had formerly made.

Mr. Reeves: I feel that this is an opportunity for the photographers to start a movement which will grow in a few years and make this proposed salon one of the grandest institutions of the country and a monument to us. We appear before you, asking your hearty co-operation in this matter. Now, if you feel that you want to know more about this matter, there is a plan that the Association can follow. It has been suggested that this Association appoint a committee to visit Winona and view the proposed site carefully and report their conclusions. On the other hand, if this plan is not adopted, I may state that the photographers of Indiana have subscribed the sum of $500 in money, in sums ranging with what they felt they could give. Personally, I would rather see that art gallery built by one-dollar contributions from every photographer in this country rather than to have it built by five or six men who would each contribute large amounts, because then the great majority will feel a proprietary interest in the salon, and when we can get the entire country interested in it, it will grow to so much more magnificent proportions and it will be treasured so much more highly by our people. Now, we have here blanks for subscriptions and we would like for you to give in such amounts as you may feel like subscribing, made payable to the Trust Company at Fort Wayne. The money is to be put in their hands and then it will be used by those having charge of this affair, and you may feel assured that your money will be spent as it should be, and that not a penny will go astray. It is in the hands of people in whom, if you knew them, you will have the utmost confidence. And, at any rate, if they wanted to do anything that was not right, the Trust Company stands responsible for the funds and no trouble will occur on that score.

Mr. Hearn: Mr. President, as I understand the matter at the present time, this is an appeal to the photographers of America and to their representative body or head. The Indiana photographers have taken up the matter and have thus far brought it to the stage that we see it in at present, and any action of the National Association would seem like taking the thing out of the hands of those who have inaugurated this movement. But I should judge that it would be a very good plan if the National Association could countenance the undertaking by appointing a committee to work in harmony with the Indiana Association for the furtherance of the object.

I am particularly favorable to this undertaking, and I would like in a brief way to explain why. We all have the interest of the State Associations at heart; we all have the interest of the National at heart. The happiness, the prosperity, and the growth of the photographers of both the National and of the various State Associations are identical. To this end last year at Buffalo the various State officers met together to consider the advisability of uniting their various interests. Action thereon was postponed until this convention. Last night we got together all the officers that we could find in the various State Associations and discussed the matter of trying to do something to weld them together. If this Winona Lake proposition is adopted and support is given it by this Association, you will not only help the various committees appointed by the several State Associations to cement their union, but you will also accomplish another thing. You will advance the art of the photographer. You will have a home at half the cost of its erection. We have for years been desirous of having a permanent home, and this will be such a place to which we can all go, if we desire, and where may be preserved the various pictures that may be considered of sufficient merit. If this plan is adopted you will give encouragement to the object sought by the various officers of the State Associations, viz.: To weld the associations together.

The question of prizes or no prizes has been a matter of considerable interest and a vexing question for a long time in the various State Associations. We desire to encourage new members to come into our associations, but it is hard work to get photographers to come to the State meetings. It is a very difficult problem to solve, how to strengthen the lack of interest in coming out.

There was a suggestion made by one of those present at the meeting of State officers last night, expressing the sentiment of those who desired to eradicate the prize system, and rather in the line of following out the talk given us yesterday by Mr. Collings. His plan was to have the different State Associations encourage their various members to send in pictures, and to select from them those which had attained a certain degree of merit, and to issue to the exhibitors of such pictures a certificate or something of the kind to show that their work was deserving of notice and had been accepted for the purpose of sending it to the National Association. The idea was to let the National Association stand in the same relation to the State Associations as a college does to a high school or academy. Then after such a picture has been sent on to the National Association, the National Association could pass all such pictures in review by a committee or jury of selection, or however it might be worked out, who should judge of their excellence, and, if favorably accepted, such pictures would be put into a permanent exhibit at Winona Lake and the senders to be given a certificate similar to a graduating diploma issued by a college. Another object to be attained by the collection of these pictures in the permanent exhibit would be the education of the public as a whole, because these pictures would be constantly on view and available for inspection by large numbers of people who would attend the Winona Assembly Summer School.

This proposition is a very favorable one, because those making it are to donate us the ground and to contribute half the funds necessary for the erection of the building. It is to be erected in what I judge will be a picturesque and beautiful location, having every natural advantage.

I therefore move that the Chair appoint a com-

mittee to work in harmony with the Indiana boys to bring this thing to a focus, so that we will have at this short session something done toward the completion in the future of a home where these various things can be worked out, in case the various State Associations should unite in support of the undertaking.

Mr. Bandtel: I wish to voice my hearty approval of the remarks made by my friend, Hearn. I need not take up any time in going into details in this matter. I agree with him in every particular. I will, therefore, second the motion.

President Nussbaumer: Will Mr. Hearn again state his motion.

Mr. Hearn: I move that the Association authorize the President to appoint a committee to work in harmony with Indiana boys who have gotten up this thing for the education and uplifting of the public.

Mr. Potter: Is that committee supposed to report to the next convention? You do not want to suspend a committee in the air.

Mr. Hearn: That is a good suggestion. Let them be authorized to take final action on that. They can do it in their judgment. There will be good men appointed on the committee.

Secretary Holloway: I would like to say a few words in behalf of this Daguerre Memorial. I have listened to the discussions and explanations that have been given, and it seems to me there must be many here who do not thoroughly understand the question. I suppose that in this audience here, coming from all over the United States, there are many of you who will say, "What is Winona, I have never heard of it before." I want to say this, that the Winona Assembly grounds comprise a Presbyterian summer school, which has been established as a great Chatauqua; every effort is being put forth by those who are at the head of the Winona Lake Assembly to outclass Chautauqua, and they are outdoing it. Every summer they send broadcast a catalogue, showing the educational features that they have. I cannot remember all they had this year, not having the catalogue at hand, but they had such people as Lieutenant Hobson and Miss Stone, and others of prominence to lecture at their school, which shows that they are looking only for the best. It is purely a summer school. You can get railroad rates during the summer season that are very liberal. You can go from any part of the United States there and back at a very reasonable rate, so it seems to me that Winona Lake would be the best place in the world for us to establish our Daguerre Memorial. The institution is backed up by thirteen or fourteen millionaires, who are spending money very liberally to beautify the grounds. They have, as I said, adopted as their standard Chautauqua, and it is their intention to excel Chautauqua and they are going to do it in a short time. It seems to me that is the place for us to have our salon.

Mr. Moses: I would like to say that I think that this motion is one worthy of the support of all true lovers of art photography, and I believe it would be the beginning of very great things. Personally, I will be pleased to contribute my financial support to its success. (Applause.)

President Nussbaumer: All in favor of this motion will signify by rising.

Motion carried by rising and unanimous vote.

President Nussbaumer: I will accordingly appoint on this Committee Messrs. Alfred Holden, R. P. Bellsmith, C. M. Hayes, J. E. Rösch, J. H. Potter, and W. H. Moses.

Mr. Potter: I want to say in regard to this matter that as an accessory to this Winona Institution the Government Arsenal grounds here have recently been purchased for $150,000. They are going to establish a great technical institute there that will last for centuries. They have ground that is worth $500,000. A number of millionaires are interested in it. They have built the Governor Mount Building up there, established for the purpose of teaching boys agriculture. They will have all the branches of a technical education for the benefit of poor boys. These millionaires have endowed this thing, and are committed to meet the running expenses. You are not going into a little institution, but you are asked to go into a great institution.

Mr. Holden: I move you, sir, that this Association set aside $500 as the nucleus of a fund to further the object. (Applause.)

Seconded by Mr. Plecker.

Mr. Clutter: Suppose, Mr. President, that Iowa, Ohio, or Illinois, or any other State in the Union should ask for the same appropriation. This is a matter that in my estimation ought to be curtailed in the National Convention. They may ask for our co-operation, which we should give, and that freely. If they will point to us what benefit the National Association will derive from this institution, and not make it an Indiana Association matter—now I love the Indiana Association, and I love the National Convention, and I love my own convention, but where will this end?

I think that that plan should be formulated so that the people may know—so that all the members of this Association may know what it means. I think this is entirely premature, and that we are voting money here before we know exactly the benefit that we will derive from it. As I understand it, this would be a home for the Indiana Association. (A voice: "No, not at all. It is broader than that.")

Mr. Reeves: It is an art salon for the entire country. But I think the gentleman is correct as to this Association appropriating $500. I think it would be a mistake at this present time. I think the matter will be accomplished by individual subscriptions.

Mr. Clutter: I am ready to donate my share individually, but I do not think that this Association ought to take any action in regard to this or at least vote the appropriation that has been asked. I think we can get more than that from individual members, and as there are very few of us here this morning, I think that the matter ought to have been brought up when we had a full house and could vote more intelligently.

Mr. Holden: I think that this matter stands in a good light at all times. When I made my motion I stated that the appropriation was to be made the nucleus of a fund to further this object. Now, then, if the National Association cannot do something toward furnishing a home where those pictures which are recognized as the best made in photography can be preserved, I think it is very little on the part of this organization not to recognize this project to the extent of contributing some money to be used in furthering it. (Applause.) I say that this thing should go broadcast throughout the country, in order that every photographer and those interested may know it, and I think your heartfelt aid in this matter will bring the interest to such a pitch that we have not known for years. For centuries paintings have been produced by great artists, and displayed in the world's picture galleries. Work goes out from many photographers which is fully as deserving of being preserved as an example of the product of an art which stands alone by itself—photography.

Mr. Hearn: If you will go to the photographers of the country and ask them to do something in furtherance of this undertaking, and at the same time tell them that the National Association was too mean to back it up with their hearty endorsement, I think you will fail to get the various State Associations to support it. But if you recognize it by appropriating a definite sum of money toward it, it will further the interests of photography, while if you neglect to take advantage of this opportunity you may never again have a like one to obtain a permanent home for pictures worthy of such recognition. We have for years been discussing this matter of having a permanent home. It is not a case of Iowa, or Ohio, or any other State. This thing is broader than that. The National Association adopts something that shall benefit the entire army of workers throughout the country, and if the good people of Indiana have seen fit to start this movement, instead of our starting it ourselves, let us be proud to adopt a good thing even if we did not originate it.

Mr. Parrot: I desire to state very briefly some of the benefits that can be derived by the National Association through this proposed action. In the first place, were this movement to be started by the National Association alone or by any photographers' association, it might take on something of an indefinite character, but here we have an opportunity to co-operate with this Winona Association, which stands ready to take care of our pictures for an indefinite period. They say they will raise as much money as the photographers to further this project.

Mr. Bowersox: I think for the small body of photographers who are here to vote away the accumulations of years of the National Association without giving everybody a chance to vote upon it is preposterous. We turned down Celeron, which is a place known all over the United States and not alone in Indiana. What can the National Association make of this? It is not a centrally located place in the United States, and I think it would be a great mistake for the few of us who are here now to vote away by resolution $500 of the funds of the Association. I think the best plan would be to appoint a committee and

let them discuss and work it out. I do not think there are half a dozen men here who understand just what is meant by this action.

Mr. Clutter: I do not wish to be looked upon as a kicker against any movement that will better the fraternity. But I wish to be right not only for myself, but for those that are not here. I am a little bit stubborn, perhaps, but if you will eliminate the Indiana Association and make it a National affair, I am ready and willing to give it my support and do everything that I possibly can for it, not only my subscription, but to secure the subscriptions of others. But we will have objections from every State Association unless you formulate a plan by which every member of the National Association shall know exactly where we stand in this matter. Therefore, I move that this motion be tabled, and the matter taken up and the committee appointed to bring it before the next National Convention.

President Nussbaumer: Your motion is out of order in that form. You cannot combine a table and a motion to appoint a committee in the same motion.

Mr. Clutter thereupon withdrew his first motion, and offered as a substitute that the pending motion be tabled. Seconded by Mr. Bowersox. The motion to table was stated by the chair, and being put to vote was lost by an overwhelming majority, only three members rising in the affirmative.

Mr. Holden thereupon called for the previous question.

Mr. Reeves: I want to stand for principle, and if this audience is composed of Indiana people I am thoroughly opposed to appropriating $500 out of the Association funds. When it comes to the other proposition, I want you to vote as your conscience dictates. We can accomplish this without appealing to the National, but the point is that this is not intended as a home simply for the Indiana Association. It is for all of us and our pictures—not for our convention. The ground taken by the gentleman is well taken, that we do not want word to go over the country that the Indiana Association has pulled $500 out of the general treasury. Bad as we want to see this worthy undertaking go through, I want to say that I am opposed to anything of that kind. I respect Mr. Hearn thoroughly, and I know that he will agree with me that unless we have a full representation here, we should not vote money out. Be careful what you are doing.

Mr. Potter: Of course, we do not want to do anything here in a rushing way, and if the majority here are Indiana people, there is not one of them who would want to commit the National Association to our advantage. We can do this thing in this way—we can make an amendment to this resolution that it shall be held in abeyance till this committee reports at the next convention. That will not take it away from before the house, yet it will not absolutely commit you, and will still support the whole question and support those people who are in favor of it. Another thing, this Association, I think, can play Carnegie in this matter, and say to Mr. Clutter and Mr. Bowersox: If Ohio will go as far as Indiana, or if any other State will find somebody who will donate them a piece of ground, and pay the taxes and half the cost of erecting the building, and agree to keep it perpetually as a home for our permanent exhibits, then I think this Association would be willing to give them $500, too. As it strikes me just now, it would probably be a great thing, especially if there could be such a thing instituted, in New York, another in New England, another in the Southern States, and probably one in the far West, all of these to be tributary to the National Association. It would not be necessary to have more than five of such institutions. If $500 were contributed to each, that would make $2500 altogether, and we would gladly pay it. Another thing, I think Indiana has stepped up pretty well at this convention. I think you have got $500 out of Indiana for this purpose. (Applause.) I will authorize an amendment that this appropriation of $500 shall be held in abeyance until the report of the committee at the next convention. If that report is favorable, then the appropriation shall become effective.

The motion was seconded by Mr. Cole.

Mr. Reeves: I can heartily coincide with that. That lends moral support to our proposition, and if upon investigation

your committee reports next year that the plan is not feasible, your money is your own. If it reports favorable, then you are only too pleased to give the $500. Mr. Potter has reached a happy solution of the question, and I hope it will go through.

Mr. Holden: I desire to thank Mr. Potter for the assistance he has given us, and I accept his suggestion and amendment.

Mr. Potter: I want to add one word. It has been mentioned here that this is not representative. It is not our fault that it is not representative. (Applause.) Those people who are absent ought to be here.

Mr. Bandtel: On the programme we find a business session announced for this morning. Every member who came to this convention knew there was an important meeting to be held this morning, and it was his business to be present. If they are not present, but run to the hotel when the dinner-bell rings, or go home, we are not to be called to account for that. (Cries of "Question, question!")

Mr. Clutter: I do not think you ought to take any action at all in regard to any money appropriation. I am heartily in support of the movement, and I do not think there is a photographer in the United States but what is.

There were again loud calls of "Question, question!" and, a vote being taken, the pending motion carried unanimously by a rising vote.

President Nussbaumer: The motion of Mr. Holden, as amended by Mr. Potter, is carried unanimously.

We will now hear the report of the Committee on Determination of an Actinic Unit.

The report of the committee was read as follows:

Report of Committee on Determination of an Actinic Unit.

Your committee beg to report that they held a long session on this subject with Mr. Steadman, who, as far as was possible with such an intricate problem in the time at the members' disposal, explained his views. Your committee feel, in view of the complexity of the problem, it is impossible for them to off-hand endorse or disapprove of Mr. Steadman's recommendations. They realize the great importance of the subject, both theoretically and practically, and would therefore recommend that, in order due consideration may be given to it, the convention appoint a committee to correspond with Mr. Steadman during the ensuing year, and report at the next convention.

Respectfully submitted,
F. DUNDAS TODD,
Chairman.

Mr. Potter: I move that the report be accepted and that the committee recommended therein be appointed. Carried.

Mr. Bolton: I hold in my hand a letter from the President of the New England Association, sending greeting, and regretting his inability to be present. He extends a cordial invitation to every member of the National Association to attend the meeting of the New England Association to be held on August 19th, 20th, and 21st next.

President Nussbaumer: It is now my pleasure to introduce to you Mr. L. F. Deardorff, of Chicago, Ill., who will give us "A Talk on Lenses."

Address by L. F. Deardorff.

MR. PRESIDENT, LADIES AND GENTLEMEN: It is not my purpose to come here to teach you anything. I only want to remind you of a few things which you yourselves already know, but which you sometimes forget. The subject of lenses has been a very perplexing thing to a majority of photographers, and I think you will all admit that next to the operator the lens is the most important factor of your outfit, and at the same time that it is perhaps the least understood by the photographer. A gentleman said to me yesterday that he did not care to know anything about lenses; all he wanted was the finished product. He said the optician would finish it and deliver it into his hands and he would work it. That is all right if a man knows how; but suppose that you were to go to a piano store and say, "I want a piano, if you will deliver me a fine piano I will play it." Could you do it? Neither can you operate a lens if you do not know anything about it. You could make a noise on the piano, of course, but could you make any music? The finest instrument in the world will not make music unless you know how to play it. Neither will a lens make the best picture unless you know how to use it.

It was my purpose to call your attention to some points in regard to light in general which are perhaps not absolutely necessary for you to know, but which it would be an advantage to you to know. Time, however, will not permit, and I will devote my attention to some of the more particular points about the lens. Of course, we must know this much, that there are a great many kinds of different light, and that the quality of the light makes a vast difference as to the result of the work, and all that kind of thing. So you ought to remember that to use your lens properly you must look to the quality of your light.

The object of a lens is largely to increase the

capacity for shortening the time of exposure. An ordinary pin-hole will make an image just the same as a lens will, and the real purpose of the lens primarily is to increase the size of that pin-hole. That is plain and simple.

Two elements enter into consideration—light and shade. If you know how to handle your lens, and you have one which is properly constructed, of course you will get a gradation of tone from extreme high light to the deepest shadows. That is what makes your picture. The adjustment of the lens determines how you will get these effects. If you have a lens properly adjusted and you know how to manipulate it, it is an easy matter to get a fine negative. If you do not know how to manipulate your lens, you cannot get a fine negative; and I defy you to print from a poor negative. A great many photographers ask, "What kind of a lens shall I get?" I am asked every day this question, "What is the best kind of a lens to have?" Well, that is not an easy question to answer unless one first knows what you are going to do. If you are going to do portrait work, you want a lens especially constructed for that work, and you will find many lenses on the market called portrait lenses that are not, properly speaking, such.

I have sometimes heard it said that it seemed to me that when a man did not know how to do anything else he went into photography. (Laughter.) But without desiring to flatter you, I will say that the faces of photographers here are of more than average intelligence displayed by photographers in many places. (A voice: "I thank you.")

It is highly important that you select a portrait lens with care. Of course, one man may produce a good portrait with a $25 lens, as good a portrait as his brother photographer may produce with a lens costing him $225. While that is possibly true, yet the question remains, Would not the man with the $25 lens have produced still better pictures with the higher-priced lens? I do not mean to say that by merely spending that much money for a lens you are going to add to your artistic ability, but the manufacturers of lenses have put enough quality into their work to counteract many of the shortcomings of the photographer. The quality of the light, the nature of the subject, the time of exposure, and all that kind of thing must enter into your consideration, but if you are compelled to compensate for the defects of a lens you will find it up-hill business to undertake. Many photographers, I am sorry to say, are laboring along that line to-day, as my experience has told me.

I want to call attention to the matter of stops. I am often asked, "What kind of a stop is the best to use?" I only give one rule for the use of stops, and that is to use the largest stop that you can to obtain the necessary definition. Never use a small stop, if you can help it. The smaller the diaphragm, the flatter will be your image; the larger the diaphragm, the more rounded you will get the image. The beauty of photographic work is in the stereoscopic effect. Let us see why this is. Why have we then two eyes? How many can tell? I will tell you two reasons that enter into it. Of course, with the aid of two eyes we are possibly able to see at a little wider range. With two eyes we have a range of exactly 180 degrees. That is not necessarily true, but from the nature of the construction of our face it is a benefit. But the greatest point is that it gives us perspective. We see from two points of view. I hold my finger in front of my face and close one eye, and I see my finger partially. I close the other eye and with this I see the finger over there. This proves that I saw a little more than half-way around my finger, because I get a stereoscopic effect. In that way we are able to judge distances. A man with one eye cannot play baseball very well because he cannot tell where the ball is exactly, and he may miss it by six inches. You cannot close one eye and turn around and walk ten feet and put your finger exactly against a pencil or any projection, because you cannot measure the distance. That is why we use a large stop. The larger the diaphragm, the wider the angle of incidence, because pictures are made by light producing from a point in all directions, and the wider the angle of light, the more stereoscopic will be the effect that you get. That is why you use a large stop.

Now, if I am tiring you, I want you to call me down at any time. (A voice: "Go on.")

Another point is, depth of focus. The optician will tell you there is no such thing as depth of focus in a lens, and that is true, optically speaking, but I will take three lenses of any make, I do not care whose—I see there are one or two opticians in here now—and I will defy anybody to produce three lenses, but what any one of you will select one out of the lot which you like better because it has a little greater depth of focus than the other. That is due to an optical defect in the lens. A perfectly optically constructed lens has no depth of focus, that is true, but a lens should not be correct absolutely mathematically, because you do not want it that way. No one wants it that way, and so the correct arrangement and adjustment of the different lenses with reference to their refractive or dispersive power, chromatic and spherical aberrations, relative curvature, are the determining factors as to the particular points of focus. If you could construct a lens so that there is no absolute sharp point about it, and yet sharp enough to please the eye, there is not that difference in comparison between the absolutely sharp point and that which is not absolutely sharp, and we overlook these defects. The public overlook them. Now, if you can get a lens of that kind, that is what you want. I find it so every time. I have had seventeen years' experience in selecting lenses. I was the scapegoat for ten years of two different firms. All their troubles came to me, and I was supposed to answer all questions. I did answer them, sometimes probably correctly and sometimes according to guess; but I seemed to be able to satisfy the people and so they come to me.

Another point is the flatness of field of your lens. It is not desirable to have an absolutely flat field except for certain purposes. If I were going to make a copy of any picture, I should want an absolutely flat-field lens that would get it sharp; but if I were going to make a group or a portrait, I would not want it for the simple reason that when you have a group in front of you and look at this side and then at that side—the head is round like a ball—when you are viewing a head straight in front of you, you see around a circle. Suppose the head is exactly a perfect sphere, and suppose you have another perfect sphere. I look at these round spheres and I get a cross in the centre, and everything is a perfect circle in front of me. Now, light passes to the plate. The plate is perfectly flat. As the light strikes the plate, the image is drawn out, one edge striking first, and so on out to the other edge. Instead of having a round image, you have an

oblong, elliptical head. I have seen pictures that nobody would want.

There are two points for you to consider. The first is, Will you have a lens that cuts absolutely sharp off the corners of your plate and gives you this distortion; or, Will you have a lens that does not cut quite so sharp at the corners of your plates? I suggest a compromise. You do not want to have it fuzzy. The lens angles most always remain the same, but there are exceptions; there are distortions. The artist who paints a picture will tell you that he never makes it in perfect perspective, because it would not look well, it would be stiff and ungraceful. That is what we want to avoid in pictures made by photography. We do not want exactly to follow the painter, but we want something that is presentable, at any rate; and so for that reason I could not recommend a lens with an absolutely flat field even for group work. Any circle will give you sharp images at the ends which will be a little bit larger on your plate; but which will you have, a little larger on the edges of your plate, or all the same size? It remains for you to decide. (Mr. Hearn: "Take crooked faces!") You can have the lens do it. You want definition in your shadows. There are many lenses on the market that you can buy at from $40 to $50 that will produce a fine image, but do you get the gradation from the highest lights to the deepest shadows? Sometimes you will strike it, but you will not always do it. You should see to it that you have a lens that will do it with almost any kind of a light. The polish on a lens determines to a great extent the detail. A lens that is finely polished will give you a nice gradation of tone, other things, of course, being correct, such as curvature, etc., from your highest lights to your deepest shadows. A lens that is not perfectly polished will give you diffusion. You cannot develop it. You will not be able to get that beautiful detail in your shadows that you want.

Now, as to brilliancy of image; some lenses will give you a very correct drawing, perfectly sharp, yet the image seems dead. And why? I wish I had the time to explain this, because I see such a great tendency among photographers to buy something that is cheap. A good lens cannot be made cheaply. It is an expensive process, for there must be corrections for spherical and chromatic aberrations. It is impossible to make a lens that shall be perfect in these respects—absolutely impossible. Chromatic and spherical curvature cannot be wholly eliminated; yet these are corrected to such a great degree that no human eye can detect it in the ordinary photographic way.

The rapidity of a lens determines, too, what you are going to get. You want a lens with a wide opening that will give you as much depth as possible and good defining power. Baby pictures count for quite a great deal, and we have some pretty large babies that complain when you time too long. In reference to the adaptability of the lens to the class of work, is your lens suitable in this respect? Have you a lens that will do your work? Are you making groups with a portrait lens? Are you straining a point and compelling your customers to take a picture that you yourself are not satisfied with simply because you do not want to buy another lens?

I am a dealer in photographic supplies, particularly in lenses, but, leaving aside the commercial aspect, you know that it pays to get a good article, and if a proper instrument pays for itself, why not have it? You should have a portrait lens for portraits and a group lens for groups. It has been my province to supply lenses especially fitted to different classes of work. That is why I speak of this. It matters not whether you ever speak to me about a lens or not, I am going to tell you this just the same, that wherever your dealer is, look to it that you get the right kind of a lens, suited to your work. If you do not understand it, consult somebody who does, and get the lens that will suit you. If you have a dozen lenses, you will not have any too many. See that you have enough, so that you will have sufficient for each kind of work. If you went to a clothing house to get a suit of clothes, you would not select a suit intended for a very corpulent man if you were a lean man. You would not like to wear it, nor would the corpulent man feel comfortable in my clothing.

I want to speak about another point which is important. Some photographers have a certain height for their lens and keep it there all the time. They do not figure that you must have certain effects here, and quite different effects there (illustrating). If you have a short lady who would like to appear tall, where would you put your lens? Have you ever thought about that? If you want a short lady to appear shorter still, get your lens up like that and look down. (The speaker illustrated the effects produced by using the lens at different heights.) You should place your lens properly. In doing so, you have to take into consideration the focus of the lens. Do not be afraid to use a swing back. Try it until you find out where is the best place to use it. If you do not know, ask someone else, and they will probably tell you. Some photographer will be glad to tell you how to use the swing back so as to not distort the image. Do not be afraid to use a lateral swing either. If you are photographing a bust or large head, this shoulder may be in focus and the other out of focus. Why? You did not use your swing back enough. If necessary, you can place the sitter in an inclined position and still retain the focus pretty well with both the front and the back shoulder, and make a much more pleasing image. This is a matter that probably is controlled by the lens.

With reference to the distance at which you work from your subject, if you do not have the proper distance, you need not look for the proper result, no matter what kind of a lens you have; if you are too close to your subject, the nose may be too large and the ears too far back on the head. The part which is toward the lens is too prominent. This shoulder sticks up too high. If the sitter has his hands in front of him, his hands will be too large. These are unpleasant effects. You must remember that you are limited. You may have a short operating-room, and if so there is only one thing for you to do, and that is get a lens that will fit your operating-room, and grin and bear it. The proper distance for a cabinet standing figure is somewhere in the nieghborhood of twenty to twenty-five feet. That is recognized as the best distance; for a cabinet head or bust picture, from ten to fifteen feet is considered the best. I give you these figures not from my own experience, but from that of successful photographers with whom I have talked in regard to the matter. The care of your lens is an important point. Photographers have come to me who had made a little scratch on their lens—a scratch so fine that you would be surprised—and because it was a very fine lens they were all broken up over it. They thought it

was seriously injured and wanted to know if I could not polish it off. I told them, "Yes, I can polish it off." Then they asked, "Will it injure the lens?" Sometimes, I am sorry to say, it will; sometimes it will not. If I think that they want it done real bad, unless it would injure the lens, I decline to undertake it. I generally tell them not to do it, as a little scratch on a lens does not injure it to any great extent; but when you sweep your operating-room, perhaps only once a week or once a month, the dust will fly and gather on your lens, and that is infinitely worse than a scratch. Dust on your lens diffuses the focus—diffuses the light, slows up your image, and you wonder what is the matter. You complain of your dry plates, you complain of the light, you complain of your developer, when it is your own fault. You ought to know enough to keep the lens clean. Divine Providence has supplied the eye with a cover that raises up and down, one of the offices of which is to supply moisture to clean off the surface of your eye so that you can see. If you do not clean off the surface of the lens so that it can see, how can you expect it to serve you? It will not work. Clean it every day. Hold the lens upside down, and with a piece of cambric or something soft, absorbent cotton is good—every photographer has that—dust out all particles of grit or silicon. These are so small that they fly through the air, but they will scratch the surface. One scratch, as I said before, makes no difference; you would not know it. But when you get millions of them on your lens, you have what we call ground glass and your lens is injured. The optician who polishes off the surface of a very fine lens would not feel like rubbing over it with something rough, or if there was dust on it, he would not advise you to rub your finger across it. Do not do it, but take a tuft of cotton and wipe it off. If it has a scum over it, wipe it with a soft cloth or a chamois that has been washed in bicarbonate of soda. Then thoroughly rinse in water or bicarbonate of soda. Bicarbonate of soda is all right. You should keep a cap on your lens at all times when not in use. Do not think that the inside of your lens never needs cleaning. I do not care how much you protect it, it will attract moisture from the atmosphere, and the moisture that is in there being exposed to a current of air will condense and be deposited on the lens, producing a film over the surface of the lens, diffusing the focus and slowing up the action of the lens. Wipe that film off.

As I said before, I merely wish to remind you of these things. You have known them before. So I will not take up your time longer. I thank you for your attention. (Applause.)

President Nussbaumer: Mr. W. I. Scandlin will give us his final talk on "Some Methods and Suggestions for Studio Advertising."

Some Methods and Practical Suggestions for Studio Advertising.

MR. PRESIDENT, LADIES AND GENTLEMEN: It is said that the best goods often come done up in the smallest packages. Following out that though and interpreting it to fit the present occasion, I appreciate very highly the compliment of addressing you to-day at this very late hour, because I know that the goods before me are of the very best quality. The moral of a story usually comes at the end thereof. There are two reasons why I desire this morning to transpose the moral of my story, if it has a moral, and bring it as the beginning of my talk. One of those reasons is the fact that I dislike to be thoroughly in the fashion; I like to be different. Then, too, if I kept the moral for the last, I might talk so long that you would lose it. I will make my talk as brief as possible. The moral is that photographers must accommodate themselves to conditions. If we do not do this, we will find ourselves in the condition of the unfortunate passenger whom the old darkey tells about. This old darkey was a ferryman. I will let him tell the story. He said, "I been busy all day and hadn't done nothin'. I got all through my work, pulled the old skiff up on shore, threw the oars up on my shoulder and went to my cabin, pulled off my boots and climbed into bed. Pretty soon I heerd a knockin' at the door, and I pulled my head outen the bedclothes and called 'Whose dar?' Some white pusson says, 'I want to go ober de ribber.' I says, 'All right, massa,' and I rose right up, clomb outen de bed, pulled on my boots and my clothes, got my oars and pushed the old skiff up to the bank. Dis white pusson he got in and I got in, and I commenced to pull. I pulled and pulled. Pretty soon dis man said, 'Did you eber study algebra?' I says, 'Al who?' He says, 'Why, algebra; have you never studied algebra?' I says, 'No, massa, never studied dat zebra.' He says, 'That's too bad, that is one-quarter of your life gone.' I didn't say nothin', kep' on pullin'. He says again, 'Did you eber study geometry?' I said, 'No sah, I don't know dat jim tree.' He says, 'Dat's too bad. Dere's half of your life gone.' I didn't say nothin', jus' kep' on pullin'. Pretty soon dat white man says to me again, 'Did you eber study trigonometry?' I said, 'No sah.' He says, 'Dat's too bad. Dere's three-quarters of your life done gone.' I didn't say nothin', jus' kep' on pullin'. Purty soon there comes a swash of a steamer comin' up the ribber. She comes closter and de boat done capsized and throwed us out in de water. Purty soon I come up and I looked roun' for dat white man. I seen him over dere dis comin' up for de second time, and I hollered to him, 'Massa, did you ever study swimmin?' but just den he went down again and I says, 'Dat's the whole of your life done gone.'" (Laughter and applause.)

That is the moral, Mr. President. We do not want all our life to be done gone and wasted We want to get into business where something is doing.

I have entitled this talk "Some Methods and Practical Suggestions for Studio Advertising." I do not like that word advertising, because it is usually connected in peoples' minds with the use of newspaper advertising, and the simile is not pleasant to me. I like better the word "publicity" but I have employed the word advertising in this title because they mean practically the same thing. I prefer, however, the word "publicity."

The subject of advertising is only just beginning to have the attention of photographers. It is high time that it should be considered; not because I say so, but because history says so, in every other business.

A tidal wave of advertising is surging over this country, taking in almost every business and profession, and carrying to prosperity those who will pay to ride on it—leaving fossilized many who refuse to take passage. The expense of adver-

tising is now as much a fixed element in general business as electricity, coal, or gas. Why not in photography?

The thinking photographer is to-day facing this proposition: Shall he meet the conditions of business as they exist and inaugurate some systematic method of advertising to retain the trade he now has and to create new business; or, Shall he continue on the old lines and leave his field open to some new man with less photographic ability, but with a keen business instinct, come into it and by judicious publicity, to win away his dearly bought success? This is no fancy picture; it is a fact that is being demonstrated all about us every year.

The progressive business man realizes that he must advertise or take his place behind the man who does—and in our own business its advantages are becoming more and more apparent. I believe that publicity is as necessary to the success of a photographic studio as the sunlight. It is needed by the successful man, to *keep* his business; and by the smaller man, to *obtain* it. Its advantage is not confined to large studios; it is equally valuable in smaller communities, but he must be fitted in either case to the conditions as they exist.

The business instinct is as important in the carrying on of a successful studio as the artistic instinct, and the business instinct of to-day is closely allied to the advertising instinct.

It is almost axiomatic that a

good photographer and poor business man *will not* do well;

poor photographer and good business man *may* do well;

good photographer and good business man *will* do well.

It is well to remember, in this connection, that good advertising is retroactive; it improves the photographer every time; and the more he tells his public that his work is good, the more he comes to believe it himself and to make it so.

He finds that he must raise his standard of excellence to make good his assertions, and from the beginning of his advertising he will find his work growing better.

I remember a story of a plain girl who had been photographed many times, always with unsatisfactory results. Finally, she went to a man who was not only a photographer but an artist. That man idealized her face and made of its plain, homely lineaments a picture which showed the real beauty that was behind the seeming plainness; and when the picture came back to her she said, "Yes, it is I, but how changed! How can I ever live up to that ideal?" She knew it was herself, and her ambition was stimulated to live up to the idealization of herself which the artist had discovered. This same theory applies in the use of advertising matter in connection with our studio work. The statements which we make stimulate us to keep to a high standard.

The public comes to believe in the man who advertises well, and will be led by his announcements to the studio where inferior work is done, rather than seek out for himself the better work. The merchant knows that a medium quality of goods well advertised brings better returns than better goods stored upon the shelves to wait a buyer. If you do not *show* goods, you cannot *sell* them.

It must, however, be remembered that advertising in a general business is not intended to sell goods; it is only meant to *stimulate interest in them*. When this interest has been excited the salesman must do the rest. Photographic advertising will not bring mail orders, nor will it *hold* trade; but it should bring interested inquirers into your studio to see what you are doing. The rest is *"up to you."*

Good advertising is, to the photographer, like a good lens. It focuses him in public attention. It concentrates upon him the interest of his community. It makes his name a household word, and his products a household necessity. But we must always remember that publicity or advertising was never intended to revive a dead business; it is only to *stimulate a live one*.

Ability, the essential element of success, must always be present, before it is safe to look for permanent results; but with it and the right kind of publicity, the business is assured.

Is advertising undignified or unprofessional? By no means. Our money is invested in the plant; our time and study have been devoted to the work, and the output of our studio is something which every one wants at some time or other. The photographer has a right to make public his claims for recognition and support.

There are many kinds of publicity, and what will suit one set of conditions may not—probably will not—fit another.

This reminds me of a story of an optician who was located in an Eastern State where the sunset was particularly glorious. While looking at a very fine sunset one evening, he conceived that he would advertise in the local paper something in this way: "Too bad, isn't it, that so many people cannot see our beautiful sunsets. If they would only go to Smith, the optician, their eyesight might be corrected so that they could see them in their full glory." That advertisement came out in one of the early papers, and for weeks and months that man heard from it. People came in who had that ringing in their ears until they felt that they wanted to see those glorious sunsets, and have their eyesight corrected, or have some spectacles or glasses of one sort or another fitted. This having been done they went out again firm in the faith that they could see the sunsets better than they did before, whether they did or not. Now, this optician moved from that section down into one of our Southern cities where glorious sunsets were noticeable by their absence, but he thought he could work the same advertisement by making it applicable to the local scenery. He did so, but it failed to bring him the same return that his former advertisement had brought, although it was identically the same with the exception that it applied to the scenery instead of the sunsets. However, it failed absolutely, although he kept it running for months and years; but he never traced a single order or inquiry to that advertisement in his new location. This simply illustrates that conditions must be considered in planning for successful advertising. (Applause.)

Great care must be exercised in the preparation of statement, selection of medium and methods of publicity, if the best results are to follow. The subject must be studied from the viewpoint of the public, even more than from that of the studio. The style of expression adopted makes all the difference between successful and unsuccessful advertising; and the same announcement prepared by two different people will often bring widely different returns.

Proper advertising creates new business. Much that would otherwise lie dormant in the photo-

graphic field is stimulated and by it developed into orders. The mother of a family knows, and the father as well, that they should have frequent photographs of the children and of themselves, but the ever-ready thought that "to-morrow will do" puts off definite action until some other time. If the matter is kept frequently before them in some strong, dignified manner, its effect is soon felt in the studio; and the more personal and persistent it can be made, the better will be the returns.

I believe its value is far greater in the creating of new business in a community than in stimulating new orders from our old customers.

Do the best work in town. Then talk about it. Educate the people of your community to appreciate the best, and let them feel that you stand for the best, the most modern and the most desirable in photography.

Advertising is not of necessity newspaper publicity. Some men who spend large sums for publicity never use papers; and, as a rule, I believe that other media are better for the average studio. If, however, you do, it should be steady, regular advertising, not in spasms. It should be carefully studied out, and every insertion should be calculated to produce its effects in clinching some argument previously made, or in presenting some new phase of the subject. The small man makes occasional spasmodic effort, then lets things take their course and wonders that his advertising does not pay. The more progressive man goes a little further, but stops short of the mark. Few seem to realize that the prime secret of advertising success is *persistency*, and that without persistency the money spent is almost wasted.

Advertising should be not confined to dull seasons, but should be used as a preventive of dull seasons. Its amount and kind should of course be regulated by season and condition of trade. Judicious methods of publicity, well carried out and fitted to the local conditions, will soon pay for themselves handsomely, and will bring to the ledger account new names from which a constant revenue accrues.

There are three methods that may, perhaps, be best applied to studio advertising:

Newspaper advertisements and local reading notices.
Booklet announcements and write-ups.
Follow-up letters.

Newspaper advertising announcements and local reading notices either by themselves or with other methods will best fit certain localities. Clean-cut, strongly written, handsomely printed booklet announcements, personally mailed, will best fit others. Or all three methods may be followed in many cases to great advantage. Follow-up letters will fit all, but must be adapted to local conditions.

In newspapar advertising there are certain general rules that may be followed in almost all localities.

Choose good mediums and style. Do not be influenced by "Policy." Cultivate the editor or local reporter, and get all you can for your money, but *pay* for what you get and be independent. Set a pace. Hold to it. Change copy often, but stick to one position. Get your public into the way of looking every day or every week for something new; and when they find it, see that it is bright, snappy, and attractive; that it tells some story well. Use space enough and margins enough not to be overshadowed by neighboring advertisements, and do not try to say too much at a time. Be dignified in statement, and, as a rule, avoid the use of cuts; they are more often grotesque than ornamental. Read proofs carefully for errors, and insist on good display.

Local reading notices I consider better newspaper publicity than space in the advertising pages, but they want to be *local* to have any value. Every time your name is coupled with the affairs of your community, you are the gainer. If you photograph a prominent social event or a person prominent in affairs, see to it that some mention is made of it in your local paper. Pay for it, if required, but do not fail to have it published.

In the use of booklets, it is, I believe, of the first importance that they be rich and attractive in outside apperaance and that there be no imprint, title or other mark on the booklet by which its identity may be established without breaking the seal. Curiosity is thus excited, and the seal will be broken, when otherwise the document might be thrown away without opening. When opened, the story should be so concise and logical as to hold the reader throughout. The matter of illustration is very important, and a set of subjects should be selected having various interesting features, with a view to catching the attention of a wide and varied class of readers.

A leading thought should be picked out and everything should be written to it. I consider it a mistake to introduce a number of topics into such a write-up, and believe rather in holding to the one main topic, seeking to build up a concrete idea, and to leave a story impressive to the mind of the reader on some one thing—not everything. Let the type be plain and of good size, and, above all, have the cuts well made and see to it that the entire job is well printed. Nothing is more contradictory than a poorly prepared announcement of productions claiming artistic merit.

Something of interest to a community may be written about every studio; and if some special season, as Easter or Christmas, or some other festival time, be chosen as the prompting season for sending it out, there will be found ample opportunity for a fetching write-up, in almost any studio that can be named.

It is always safe to assume that the people whom you will address in this way are public-spirited, and naturally interested in everything that goes to raise the art standard of the community. This of itself will often afford a logical reason for addressing them, and a very strong series of arguments brought forward to show why they should be interested in your interpretation of artistic photography.

Remember, however, the remark of a prominent man who once said that he would "almost rather be accused of murder than of poor taste." Be careful that the effect is harmonious and in perfect taste, no matter how small the booklet may be.

A carefully prepared form letter referring to the booklet and adding an argument or two to the subject-matter it contained may well follow personally addressed booklets, and that again be followed by further announcements from time to time, three or four each year. A list of names should be carefully selected and followed up persistently; 500 or 1000 well followed up are better than 3000 only once. This will bring far better results than an occasional announcement to a much larger list.

It is a fact not to be disputed that the public is influenced by the style of advertising adopted in any field of publicity, and the impression

created by the advertising attaches equally to the product advertised; therefore, it is that good advertising suggests good photography; poorly prepared, careless advertising, the reverse. It is a fallacy to think that where no competition exists publicity is needless, for in my judgment the greatest good produced by the proper methods of publicity is in the creating of new trade, which without it would never materialize.

To sum up:

We must do good, honest work, and in order to do it must keep up with the times.

First, last, and always, let people know we are alive and after their business.

Do not sit still and wait for orders to come after us. Get out and stir about for them, and take every honest means to make the public of our community aware that we are one of them.

When by persistent publicity of the right kind we educate our community to feel we are the only real, true thing in the bunch, our business will improve of itself. We shall then realize how vast an importance attaches to proper methods of publicity in the conduct of a studio. The photographer who fails to recognize the necessity of advertising is bound to find too late that a most important part of his education has been neglected

The moral of this story is:

LEARN TO ADVERTISE!

President Nussbaumer: Mr. Steadman, at whose request we announced that he would give a demonstration at half-past two this afternoon, says that he will give it earlier if the people so desire. He understands that a number of those present want to get away on early trains. Mr. Steadman can be seen at the close of this meeting.

Is there any other business to come before us? If not, a motion will be in order to adjourn, to meet next year.

On motion, the convention then adjourned, to meet at St. Louis in 1904.

FRIDAY AFTERNOON—SUPPLEMENTARY.

Although the convention formally adjourned at noon, some fifty interested spectators remained to witness the demonstration at 2.30 P.M. by Mr. F. M. Steadman, of home-window lighting, kodak manipulation, and development of film in the kodak developing machine. The expertness displayed by Mr. Steadman in reversing the values on the face of his subject seemed more like the work of a magician than a photographer. The verdict of his audience was that he had fully demonstrated the adaptability of the home window and the kodak to portraiture. After successfully developing the film in the machine, he gave his special method of reduction and intensification, which when used locally with a brush places in the hand of the worker a power to reduce and intensify any desired planes almost by a single stroke, as a painter would lay on a color.

Mr. Steadman was the recipient of many expressions of warm appreciation from those who attended his demonstration. In many ways his work proved a revelation to professionals who have always worked under a skylight, and should give home portraiture a strong impetus.

AN IMPORTANT MOVEMENT.

The State and National Associations.

As an outcome of the National Convention, there was held on Thursday evening, August 6th, at the German Club building, Indianapolis, a numerously attended meeting of the officers of various State Associations present at the convention. This meeting was arranged by a few enthusiastic Association workers led by Messrs. Charles W. Hearn, of Boston, and J. M. Bandtel, of Milwaukee. Its purpose was to discuss Association matters in general, but more especially to ascertain the possibilities of a more helpful relation between the various State Associations as units and collectively between the State Associations and the National Association. The movement thus introduced is one of great importance to the fraternity, and all who are interested in the organization of the fraternity for mutual help and benefit.

Among those present were the following: J. M. Bandtel, of the Wisconsin Association; C. J. Van Devanter, of the Illinois Association; R. I. Spofford, John R. Smiley, and F. W. Medlar, of the Iowa Association; W. S. Lively, A. W. Judd, and F. J. Spengler, of the Kentucky and Tennessee Association; George J. Parrott,

B. B. Hardy, and W. E. Vilmer, of the Indiana Association; Alfred Holden and E. W. Brown, of the Pennsylvania Association; Charles W. Hearn and G. M. Bolton, of the New England Association; A. L. Bowersox and C. A. Beckman, of the Ohio-Michigan Association; J. R. Snow, Thorwald Lee, and J. R. Zweifel, of the Northwestern Association; L. G. Alvord, of the Kansas Association; O. W. Cole, of the Virginia and North Carolina Association, and F. A. Webster, of the new California Association, just organized.

Missouri, the Pacific Northwest, Texas, and Oklahoma Associations were not represented, nor was the Southern Tri-State Association.

Mr. Charles W. Hearn was chosen as chairman and Mr. J. M. Bandtel as secretary. According to its purpose, the meeting was addressed on subjects of general interest to the officers of the State Associations with a view to mutual help in their future convention work. The prevailing sense of the meeting seemed to be that the holding of National and State Conventions in the same year caused a confusion of interests, as a great many photographers who are able to attend a State Convention are not able to also attend the National in the same year, and therefore must remain away from one or the other meeting; whereas if the National Association should hold its convention every alternate year and the State Associations held their meetings only during intervening years, it was thought that this might improve the attendance at the State Association Conventions. There seemed to be a great desire that the State Associations should co-operate with the National, as it was believed that a great many photographers first became interested in their State Association, which served as a sort of primary school from which they graduated into the National Association after they had learned to appreciate the value of Association work.

A brief résumé of the discussion follows:

Mr. Bandtel gave a short address, setting forth the objects of the meeting to be the desirability of closer union of the various State Associations, and with a view of having them work in harmony with one another and with the National Association, thereby furthering the interests of all. The speaker thought that eventually a point would be reached where the National Association would become a delegate body, the number of delegates from each sectional or State Association to be apportioned with relation to the size and importance of each Association. These delegates to be the ones who would conduct the work of the National Association, the officers of the parent Association to be chosen from among them, these delegates to do all voting and committee work.

Mr. C. W. Hearn spoke upon the subject of closer union of the State Associations and their harmoniously working together.

Mr. Zweifel thought that the State Associations should hold their meetings in alternate years, the National meetings to be held during intervening years.

Mr. Bowersox approved the alternate-year plan and also thought that State Conventions should not hold their meetings upon such dates as to conflict one with another. The dates should be sufficiently far apart. He stated that the Ohio-Michigan will hold no meeting next year, but will try to interest its members to attend the National Convention at St. Louis.

Mr. Hearn said that the New England members did not go to the National because they have such a good convention at their own home.

Mr. Van Devanter said that the State Associations are chiefly made up of photographers who are the most active and the most interested in the work of the National Association. Most of the members of the Illinois Association, he said, are members of both the State and the National organizations.

Mr. Cole thought the tendency was that the National Association injured the State Associations more than the reverse condition. Attending both State and National Conventions is an expense that many photographers cannot afford, and they will attend the convention which is nearest to them, unless the National happens to come their way. Only a small number of members of a State Association can afford to attend the National. The greatest problem with his State Association was to secure a liberal attendance, and he believed the interest would be increased by the alternate-year plan.

Mr. Lewis stated that he had written a letter to President-elect Reeves about the alternate-year plan of holding conventions. He thought that attendance upon conventions was the best thing a photographer could do for his own advancement and would bring him a good return for his investment of time and money. Members of State Associations should work hard for a few years to get their friends to attend their conventions. Mr. Lewis advocated the alternate-year plan.

Mr. Lively compared the State Associations to grammar schools and the National Association to the high school or college. He advocated the giving of a certificate and rating to exhibitors at State Conventions which should entitle the work of the member to entrance at the National Convention. He thought this would give the exhibitor a certain standing and thus encourage them to do their best.

Mr. C. W. Hearn referred to the permanent salon proposed to be located at Winona Lake, Indiana, and also recommended the issue of certificates of acceptance. Mr. Bandtel said that this particular idea had been carried out in the Wisconsin State Association by him this year, and certificates of acceptance were issued by him to those who sent work to the State meeting. He

emphasized the desirability of eliminating the professional jealousy which keeps photographers apart, and said that it should be known to the public that photographers as professional and business men are in harmony with one another. He had been opposed to the awarding of prizes or medals as tending to create antagonism. Mr. Hearn coincided with the views of Mr. Bandtel in this regard.

Mr. Bandtel then read the communication from Col. John A. Ockerson which he had received, similar to the one presented at the National Convention, calling attention to this invitation to participate in the St. Louis World's Fair, and suggested that the officers of such State Associations as are to hold their conventions later this year should take the matter up at their conventions; and that those who have already held their conventions before this date should find some means to communicate with their members with regard to this matter and try to get a collection of pictures.

Mr. Medlar stated that their association had tried the plan of holding no convention when the National Association held one in the same neighborhood, but he was not favorably impressed with the idea, although he thought possibly his opinion might be modified.

Mr. Cheyne referred to professional jealousy influencing members to stay away from conventions. This, he said, must be overcome because it is through first creating interest in the State Conventions that many men are eventually led to the National Convention and its advantages.

On motion of Mr. W. S. Lively, of McMinnville, Tenn., the Chair was authorized to appoint a committee to draft suitable resolutions covering the question of alternate years for State and National Conventions, a copy of these resolutions to be forwarded to the President of each State Association, to be taken up and acted upon at their next convention and finally disposed of. The Chair appointed this committee: Messrs. W. S. Lively, Chairman; J. M. Bandtel, Secretary; A. L. Bowersox, and C. L. Lewis.

The Committee later reported as follows: Subjoined is a copy of the resolution adopted in pursuance of the action taken by the representatives of the various State Photographers' Associations, at a meeting held during the convention of the P. A. of A., at Indianapolis, on August 6, 1903, viz.:

Resolved, That the Committee appointed by the officers of the State Associations in conference assembled, take up for discussion and careful consideration, at their respective State Conventions next ensuing, the advisability of holding conventions in alternate years, in order to learn through such discussion the opinions of the members of the various State Associations, with a view of obviating in the future the interference of State meetings one with another, to the detriment of each and all; also to consider the advisability of adopting a uniform rating system for all the State Associations in judging exhibits, making 100 points the maximum, this to be divided or proportioned as each Association may deem proper, to wit: so many points for posing, so many for lighting, so many for chemical effects, so many for general excellence, etc. And be it further

Resolved, That we recommend that each exhibit sent in shall receive careful examination by the judges and be awarded a certificate with their markings, and that when a certain grade of excellence shall have been reached, that the recipients of the certificates shall be entitled to send a display to the National Convention.

We further recommend that this certificate of excellence shall be in lieu of all other prizes. And be it further

Resolved, That the State officers, after the holding of their respective conventions, shall report the results of the deliberations had on the above questions to Mr. W. S. Lively, McMinnville, Tenn., Chairman of the Committee appointed by the representatives of the various State Associations assembled at Indianapolis as above stated. W. S. Lively, Chairman, representing Kentucky and Tennessee; J. M. Bandtel, Secretary, representing Wisconsin; C. W. Hearn, representing New England; and C. L. Lewis, representing Ohio and Michigan.

The question of the advisability of awarding the trophies offered by various manufacturers was then discussed, the general opinion appearing to be unfavorable to the continuance of this practice.

Mr. Parrot advocated working in harmony with the National Association, this being regarded as the high school or final arbiter of pictures taken from the various State exhibits, a certificate of the State Association to constitute the condition of admission to the exhibitions of the National Convention.

Mr. Medlar reported good results with the "no prize" plan in his State Association Convention.

Mr. Hearn called special attention to the Lens and Brush Club, of Boston, and its effective work toward the advancement of the profession in that particular locality. He suggested that the same idea be tried by the officers of State Associations in their respective localities.

The general consensus of opinion at the meeting was not in favor of now taking definite steps for or against the alternate State and National Convention plan, but simply to bring the matter up properly before the various State Conventions, with a view to its intelligent and final disposition during the coming year.

On motion, the meeting adjourned to meet at St. Louis next year.

It will be observed that the National Association was not represented at this meeting, a regrettable omission, considering the general feeling in favor of definite affiliation of the State and National Associations. We hope that a motion looking to the desired union will be prepared and presented by the combined State Associations at the St. Louis convention. The time is ripe for such an affiliation of interests, and both National and State Associations would be strengthened and benefited by the union.

THE unusual length of the Report obliges us to defer until our next number, accounts of the social, pictorial, and industrial features of the convention. [ED. W. P. M.]

A REMARKABLE EXAMPLE OF CHILD PORTRAITURE

By Fred. Radford, New York

See article on "Tone Values" in this issue

WILSON'S PHOTOGRAPHIC MAGAZINE.

FOUNDED BY EDWARD L. WILSON.
L. W. WILSON, EDITOR.

VOL. XL. SEPTEMBER, 1903. No. 561.

PROFESSIONAL PORTRAITURE.*

BY CHARLES W. HEARN.

I.

Of the hundreds of photographers in America whose names are widely associated as being among the leaders of the profession, there are about one hundred whose work by common consent is reputed as outranking that of all competitors. Of this small number, hardly ten have given instructive addresses at various conventions, and perhaps an equal number have, of recent years, been contributors to our photographic magazines. To this mere handful of master photographers who have, in various ways, contributed of their knowledge for our instruction, our thanks are due, and as one who has been individually benefited by their labors in these directions, the writer extends his personal thanks and appreciation.

Before commencing this series of papers, the writer made a list of the names of fifty out of the one hundred mentioned above, representing all sections of the country—men who have risen to prominence in photography by their mastery of the technique, who are sincere students of art, and familiar with its application in photography.

With a few exceptions the writer is personally acquainted with these fifty prominent photographers—some as intimate, professional friends, some by correspondence only. He thinks it is a pity, however, that these clever men do not more fully realize the power for good which they possess for the uplifting of our profession and the inspiration of its followers, if they, who are both competent and able, would take up the, in a measure, self-inflicted task (even if done at the solicitation of the editor of this magazine) of striving to be of some service to their fellow-photographers. In the list above mentioned we are pleased to note the names of some who have done their share in speaking, or writing, or both. But there are others, of equal ability, whom our readers, as well as ourselves, would be glad to hear from as contributors to photographic literature.

Photography has done much for us all, and those who have risen to eminence owe it as a duty to their art, which has been the means of uplifting them, to give of their

* Our readers in all sections of the country will hear with pleasure that we have just made arrangements with Mr. Charles W. Hearn, of Boston, Vice-President elect of the P. A. of A. and Past-President of the New England Association, to contribute a series of educational articles to our pages during the next twelve months.

Mr. Hearn has had a wide and varied experience in professional photography, his admirable treatise, *The Practical Printer* published in 1876, having passed through several editions as the authoritative text-book on printing at that time. During later years Mr. Hearn has given special attention to artistic portraiture, and his contribution on this subject to the *Association Review* shows how profitably he has studied the application of art principles in modern portraiture.

We are confident that Mr. Hearn's papers will be directly helpful to the progressive photographer, and especially suggestive as showing the great benefits to be derived from the pictorial exhibits at our conventions. The aim of the series, as proposed by Mr. Hearn, will be to awaken photographers to the necessity of closer study of art and especially to show them the very practical advantages which may be derived from active association with the other progressives who attend and exhibit at our conventions.—EDITOR, W. P. M.

knowledge and experience for the benefit of others.

The literature of law, medicine, philosophy, the sciences, etc., has been enriched by the writings of the men who have become eminent in these various professions. Mankind is daily benefited thereby, and future generations will, in turn, still further advance, so that the world's knowledge is continually being increased.

At the present time photography is fortunate in possessing, here and abroad, able editors, who are valued as instructors by their readers. Trade magazines are a success not only on account of this, but equally for their usefulness in bringing together a mass of profitable information for our advancement. Where do the editors go, in a majority of cases, for their assistance? With the exception of painters and teachers of art, they are obliged to lean heavily upon enthusiastic and skilled amateurs, many of whom are painters, scientists, bankers, professional and successful business men. Far be it from the writer to speak aught but praise of this class of photographers, to the most advanced of which we are principally indebted for the growth of art in photography. But this is not as it should be. The professional, with his better knowledge of the technique of photography, should lead in this direction of instruction, instead of being almost unknown.

If the fifty professionals mentioned above were to take up the task of calling attention to the errors committed by their less skilled brothers, suggesting remedies, what they should and should not do, their services would be of far more value than those of the well-meaning amateur who, lacking correct technical information, sometimes innocently leads us on to the rocks.

Our leaders in the profession show us their work, which we admire according to our ability to appreciate it, greatly esteeming the makers for the skill displayed. But does this satisfy them? Is the adulation of the smaller man, and the commendation of his equals on the "clever piece" he has produced, sufficiently satisfying to his nature? I think not. There is within the soul of us all a desire to help the weak. We do it in other walks of life, why not in this? Is it possible, friends, that you possess this view—that what knowledge you have acquired you intend to keep to yourself, so that others may not be benefited by it? I sincerely hope that no one of the select list of "Stars" possesses this trait to any great extent; or, if he does, that he will speedily throw off the burden. It will despoil his manhood. It hurts him more than anyone else. It goes further than he imagines, for it disgraces him in his own opinion. What could be worse?

We can well afford to be at times misunderstood, and, perhaps, uncharitably dealt with, if we are conscious of the fact that we wish well for our fellow-men, and are ready to help and lend a hand where we can. It is not necessary for us to be egotists, full of conceit, to have the consciousness that we are desirous of regulating our lives, to eradicate as far as possible the traits which we condemn in others. We cannot err very much, or in the end be very far out of the way, if we try to bring into our natures those qualities which we admire in the lives of others. This broad-minded way of viewing matters, losing sight of the belittling things that may appear as offering some personal advantage, would do much for our art and our own growth.

We had here in Boston a vast amount of real estate controlled for many years by a body of men termed "The Fifty Associates," whose action as a unit has resulted in making fortunes for them all from very modest beginnings. If the men composing this list of fifty master photographers were to work together for the elevation of art photography in the dissemination of their knowledge by various methods of publicity, they would cause a great revival of interest which would spread and grow all over the country, resulting in much good to everyone connected therewith, and a renewed interest in and greater appreciation of photography by the general public.

What photographers, as well as photographic associations, need most urgently at present is an old-fashioned revival of interest—something to bring the dead associations to life and to rouse them to greater activity by infusing new blood into their veins. Therefore, when "Papa Cramer"

gives us our photographic war cry, "I'm so happy," at St. Louis in 1904, let us all give it with gusto, as we did at Detroit. Let us in truth be happy and cheerful, making our conventions the event of the year, because of the information we gather and the social life we enjoy with kindred and congenial spirits.

While it is true that the power for good which our leaders possess is very great, the writer is entirely frank in saying that knowing many of them as he does, he is certain that it is not from any selfish reasons that they refrain from exerting that power, but mainly because they lack assurance that there is a general desire on the part of the workers in the profession to hear from them in this direction.

Some may hold back, not because there is nothing they could write about which would be of service, but mainly because they fear they could not write it in a way that would read well, etc. If this is the case let them fear no longer, for there is not an editor of any photographic magazine who, if you will furnish the thoughts and ideas, would not be glad to prepare your contribution for publication.

For argument's sake, we will say that some may not contribute of their knowledge on account of modesty. This reason, however, is no sooner advanced than it should be speedily dismissed, for we do not really think "the boys" are as modest as all that. They want to be coaxed a bit, that is all!

While, therefore, we wait for some editor to win fame to himself by bringing forth such a "Galaxy of Stars" let us, my brethren of a lesser magnitude, who do not lack this assurance of appreciation that they seem to have, or who are not troubled by such modesty, contribute and write for the common weal. Let us cast our bread upon the troubled waters, and do what we can to ameliorate the condition of things, without fear of criticism as to the misconception of our purpose of assisting those who may, by our so doing, find something of advantage to them.

PHOTOGRAPHIC TECHNIQUE.

The professional who has worked for many years in all the departments of photography has much cause for satisfaction in that he has thus acquired that technical knowledge which is a source of constant value and strength to him in his vocation. It is this information which gives the greatest promise in his advancement toward art photography. He can thus avoid the pitfalls into which the less skilled professional and average amateur fall. The former is surer of his steps and only needs conviction that he is on the wrong line to speedily correct himself. The skilled amateur, however, is often practically as well informed as the professional on the more important of photographic processes, and, owing to the more extended range of his investigations, he acquires a wider range of information than the requirements of professional work demand.

The chief danger to the professional lies in the fact that he sees no desirable value in any progressive effort which does not consist in the improving of the quality of his photographic technique. Lenses which are more speedy, or so constructed that they appeal to him on account of certain much-desired features; a plate that promises better than the kind he is using; a developing formula that may improve his negatives, or a new paper—these appeal to him as the only objects of interest in photography outside of the financial returns.

New generations rarely overestimate the achievements of earlier days, but, with the exception that plates are now more speedy than formerly, and that these and the papers we use are now more readily obtainable, the writer wonders how many of his readers are aware that the photographic technique of the good workman of thirty years ago was, for all practical purposes, equal to that of to-day. A man at that time had to be, in many respects, a much better workman, possessed of more knowledge to produce good work than is necessary to-day, when we are able to purchase much which in those days required considerable gray matter to produce.

Do not delude yourself, my friend, that you have so advanced to-day in mechanical skill as to be beyond the standards of former times. The writer is not alone in asserting that you have by no means excelled, even if you have equalled, the technique of Henri Rocher of thirty years ago, whose magnificent exhibit at Amster-

dam, Holland, in 1874 (?) brought him international fame and secured the gold medal in competition with seventy of the leading photographers of the world. This gold medal, the highest award given, was for "technique." Only those who knew Rocher's work and can by mentally reviewing it see how his results compare with the qualities looked for to-day by our best workmen; only those who knew the value of his friendship and were thus able to learn of his high ideals, lofty inspirations, and grand moral character, can appreciate the position this man held in the estimation of the photographers of that time.

The writer feels sure the reader will pardon these seemingly eulogistic remarks from one who as a boy was a pupil of Rocher, who saw him in his daily life, and who has since learned to value his counsel of "high ideals through life," which have served as an inspiration when at times inclined to be content with less. We can have a high standard, although we may never reach it. Mr. Rocher has now passed away, but his fame is still fresh in our memory. The good advice to "aim high and live to deserve it, if obtained," which he gave to a humble printer, is still good for those who start with us.

The writer has no wish to go on record as underestimating the value of mechanical perfection in the different departments of photography. He has spent years with this object in view, and is equally as disturbed as any of his readers by any deficiency in this direction; but he thinks that it is time to call a halt and give more attention to the art side, in which direction there is yet much to be accomplished.

It is not the purpose of the writer to go into the details of the practice of professional photography. These things are taken care of in the various manuals and circulars issued by the manufacturers of photographic products, as well as in certain instructive little text-books issued on these subjects. We think it advisable, however, to mention a few things that are very important, and which will have a direct bearing upon what is to follow. Such special formulæ as may be given will be more for the purpose of having the same in direct connection and touch of the reader than for especial merit over others equally as good, if not superior.

(To be continued.)

MATT ALBUMEN PAPER: HOW TO PREPARE IT.

BY A. J. JARMAN.

For several years past the revival of the use of albumen in preparing photographic printing-out paper has been the desire of many photographers. With a well-made albumenized paper the tones obtainable ranged from a brown-red to a purple-black. Another quality which albumenized paper possesses is the perfect rendering of every quality contained in the negative. Two kinds or grades of paper were always procurable, the single albumenized and the double, the latter giving considerable gloss to the surface of the finished print.

At one time it was considered proper to have a high gloss upon the surface of every print, presenting in appearance the top of a French plum-box. Although glossy prints are produced to-day with gelatine printing-out papers, the matt surface is now most popular. This has been brought about, in a large measure, by the introduction of prints by the platinum process.

One method by which albumen prints with a matt surface used to be produced was by rubbing the surface of the print (after being mounted and rolled flat) with very fine and dry pumice-powder, or with cuttle-fish powder; but these methods, at their best, were imperfect. Matt albumen paper has been the desire for years of a large number of practical photographers, and the question has often been asked, Why cannot such a paper be made? Such a paper can be made. The purpose of this article is to give the necessary instruction for making it, the process being

very simple and in no way difficult, especially to those who are used to the sensitizing of ordinary albumen paper. To those who are not used to this class of photographic work, a little practice will soon enable them to become expert in both albumenizing and sensitizing the sheets of paper. It is advisable that those attempting the preparation of this paper for the first time should use small sheets only. When these can be coated perfectly, and the general manipulation is understood, sheets of a larger size may be taken in hand.

It will be necessary, in the first place, to procure paper of a good quality. There will be no difficulty experienced in this, as nearly every large photographic-stock dealer supplies plain paper, suited for this class of work, in sheets 18 x 22, at fifty cents per dozen. This size sheet may be folded twice, so as to cut into four sheets of a very suitable size to practice the albumenizing and sensitizing with.

Do not attempt to use any kind of paper for this class of work and imagine it will be successful. There are three things which cause failure in the use of ordinary commercial white paper. First, hyposulphite of soda, often contained in ordinary paper; secondly, ultramarine blue, and, thirdly, metallic spots—either iron, brass, or gun-metal—obtained by abrasion of the different parts of the machinery used in paper manufacture. There is also a fourth impurity—such as chalk, kaolin, etc.—which is used in the manufacture of some papers. The papers employed for photographic purposes are of the highest possible purity, and, being made by special machinery, the first cost is higher. If, however, it is desired to be successful from the start, use only such paper as can be depended upon.

There is one kind of paper, however, which may be prepared, now usually included as a photographic paper—*i. e.*, Whatman's hot-pressed drawing paper. This may occasionally show a few metal spots, but as a paper for special work it can be relied upon for producing results which no other paper will give. Its peculiar grain and cream tint aid in producing beautiful artistic results, especially for portraiture, where a large head forms the subject, or for the production of marine views.

There are other papers also which cannot be used for the process about to be described. These are the cream- and buff-colored drawing and crayon papers. Although very tempting in many ways from an artistic point of view, it has been found, after many trials, that they are quite unsuited for our present purpose. These facts are mentioned so that neither time nor money may be wasted by those who desire to put the process into practice, which would only end in disappointment.

Another difficulty which presents itself with this class of paper is that their porous character causes too great absorption of the solutions upon which they are floated. This gives endless trouble when it comes to prolonged washing and fixing, such papers requiring from half an hour to one hour to entirely eliminate the silver salts used in sensitizing.

The apparatus required to prepare the paper consists, simply, of two clean wide-mouth bottles, two perfectly clean trays (or one double tray with a glass-plate centre), several dozen photographic wood clips, a kerosene lamp-chimney, a few yards of cheese-cloth which has been well washed in hot water, and a packet of absorbent cotton. The trays used for this work should be used for nothing else, and, above all, kept scrupulously clean.

Preparing the Albumen Solution.

Place the whites of half-a-dozen fresh eggs into a clean basin. Take care that no trace whatever of the yolk becomes mixed with the albumen. Beat the albumen into a broken up mass by means of a four-pronged silver-plated fork for about five minutes. Add to this four ounces of distilled water; then beat into a froth; allow to stand for a short time. Prepare a solution of the following ingredients:

Chloride of Ammonium . .	240 grains.
Chloride of Sodium . . .	280 grains.
Distilled Water	60 ounces.

Shake well until dissolved; then filter through absorbent cotton into a wide-mouth bottle. Pour into this the albumen, place the palm of the hand over the

top of the bottle and shake vigorously for about two minutes. Add three or four drops (not more) of a 4 per cent. solution of carbolic acid. The mixture must now be allowed to stand for twenty-four hours, during which time it should be shaken occasionally. In the last six hours the froth will almost entirely subside. The mixture may now be filtered by tying two thicknesses of washed cheese-cloth over the top of the kerosene lamp-chimney, so that when the chimney is inverted and placed into a wide-mouthed, clean bottle the albumen mixture may be poured in and allowed to filter through the cheese-cloth. The solution is now ready for coating the paper. If it is to be used directly after it has been filtered it should be arranged so that the solution can flow directly into a clean tray, keeping the lamp-chimney filter close to the tray, so as to prevent bubbles being formed. The solution will keep in good condition two weeks.

In the previous article the method of preparing the albumenous solution for coating the paper previous to sensitizing was described. The operation of albumenizing is the next point to be considered. It is accomplished in the following manner:

Having the solution already in a suitable tray, which must be larger than the paper to be floated, take the paper by opposite corners and lower the centre of the curve down upon the liquid; then lower the corners held by the hands. Now quickly lift the paper by one corner to see that no air bubbles have formed; simply stroke the paper with the finger over that part, so that it is evenly wetted. Lift the opposite corner and examine. If all is right, lower this end and allow the paper to remain until it lies quite flat. It may then be removed by draining the excess of liquid from one corner against the inside edge of the tray; then suspend by two photographic wooden clips upon a stretched copper wire to dry. The lower ends may be prevented from curling by wiping the excess of liquid off with a strip of clean blotting-paper and attaching to each lower corner a clean wooden clip, these being allowed to remain until the paper is dry.

It is advisable to prepare quite a number of sheets of paper in this way, as the paper will keep well for months previous to sensitizing.

After the sheets of paper have been prepared and dried it will be necessary to coat them once more to obtain the best results. The object of this second coating is to even up the surface of the paper, so that, after the second coating, the sheet of paper is suspended to dry in the reverse position to that when it was first coated.

Previous to the second coating each sheet of paper must be rubbed carefully all over the surface with a clean cloth so as to clear off any small shining spots that may present themselves upon the surface. This operation must also be performed after the second coating, so as to even the surface completely.

When coating the paper with the albumenous solution it will be observed that a peculiar stria is formed, together with elongated air bubbles. These are easily removed by using a strip of clean cardboard or paper to draw over or scrape the surface of the liquid from side to side of the tray, wiping the paper-scraper against the side of the tray.

Having prepared all the paper desired place it, under pressure, between two sheets of glass with a clean blotter between the glass and the paper, or it may be placed, under pressure, in a large printing-frame until required for sensitizing.

It is a good plan to mark the back of each sheet of paper with a light pencil mark, so as to distinguish the front from the back; otherwise there will scarcely be found any difference. This also forms a reliable guide when sensitizing.

In sensitizing the paper the tray containing the sensitizing solution must be larger than the sheet of paper. This will facilitate the handling of the paper, and allows more evenly-prepared surface.

The sensitizing solution which answers very well for this class of paper, is made up as follows:

Recrystallized Nitrate of Silver .	4 ounces.
Citric Acid	1 ounce.
Distilled Water	30 ounces.

Dissolve the nitrate of silver in twenty ounces of water and the citric acid in ten ounces. Add the acid solution to the nitrate and filter through absorbent cotton.

This mixing must be carried out under the light of a gas jet or oil lamp, as the solution is acted upon by white light.

The solution must now be poured into a clean tray and the process of sensitizing carried out in precisely the same manner for the albumenizing. It is advisable, however, to use india-rubber finger tips to prevent the fingers becoming stained with the silver solution.

If, on lifting the corners of the paper, there are any air bubbles, they must be dispersed by touching them with a piece of clean stick or the rounded end of a glass rod. The paper is then quickly returned to the nitrate solution and lifted once more to make sure that the spots where the air bells were are completely wetted with the sensitizing solution.

The paper must be allowed to remain upon the solution for three minutes, not less. It may then be removed by the two top corners and suspended to dry, allowing the solution to drip over a funnel by slightly inclining the paper on one side. Then the paper is thoroughly dry (which must be done by the aid of a gas-stove, as the products of combustion will affect this paper). It may be packed by rolling the sheets together and wrapping them in paraffin paper as an outside wrapper or by placing in a printing-frame protected with the same kind of paper. Do not pack in any ordinary kind of wrapping paper, because the impurities contained therein will spoil the sensitized paper in a very short time.

The printing of this paper may be carried to about two shades deeper than required for the finished picture, and the toning may be done with any of the usual gold-toning baths. An old bath gives better tones than one freshly made. The following toning-bath will be found to answer well with this paper:

Water	25 ounces.
Chloride of Gold	2 grains.
Borax (saturated solution) . .	2 ounces.

When mixed it is ready for use. This solution is used over and over again, with the addition of a little chloride of gold solution (one grain to one ounce of water) and a small quantity of borax solution just before toning.

The prints should be fixed in a solution of hyposulphite of soda, measuring 20 on the hydrometer. The washing of the prints should be thorough previous to toning and after fixing. Only the slightest change in color is required in toning. It is a very easy matter to overtone with this paper. Prints fixed in hypo without gold-toning present a beautiful sepia color.

After fixing in the hypo solution, which should occupy for this paper about ten or fifteen minutes, the prints must be placed direct from the fixing bath into a bath composed of common salt, three ounces; water, one gallon. After five minutes' soaking in this solution they must be washed in six or eight changes of water. They are then ready to dry by blotting or by suspending them with wooden clips, when they may be trimmed and mounted.

STUDIO ADVERTISING.

BY W. I. SCANDLIN.

I.

In preparing a series of articles on the general subject of studio advertising, I shall, first of all, try to present some logical reasons why publicity is necessary to the success of the photographic studio, and next shall endeavor to outline, from month to month, a series of suggestions and methods for the practical application of publicity to studios working under varying conditions and surroundings.

I shall try to make these suggestions cover a period far enough in advance of publication to enable their being worked

* In this series, to appear monthly, Mr. Scandlin will discuss the practical advantages of modern publicity methods as an aid in building business. The series is designed to be a real help to our readers, and will cover the photographer's year with seasonable suggestions and practical methods based upon successful experience. Queries relating to the application of methods to individual studios should be personally addressed to Mr. W. I. Scandlin, Brooklyn, N. Y.

out, if desired, during the current year. Is there any reason why the average studio should not advertise? It is producing work that is desired by the community at large, and in such variety of style, quality, and finish that it is impossible in any single statement or set form of description to cover photographic work produced under all conditions.

It is evident that a photographer's sign does not tell the whole story of what he does or how he does it, though it may be true that the sign or showcase indicates to those who pass and chance to see them something of the nature of the business carried on inside. But even if this is so, what percentage of the community ever sees the sign or showcase unless their attention is especially directed to it?

And again, how many who may, perhaps, be vaguely conscious that there *is* a photographic studio on some particular square or corner, can tell whether it belongs to Smith, Brown, or Robinson, and whether it makes tintypes or carbons?

Everybody within a given radius of any town or city will be sure to know, however, that Messrs. Pan, Handle & Co., are dealers in pots, kettles, pans, and all sorts of hardware. They know this because P., H. & Co. take pains to advertise frequently in the local papers, or by means of leaflets, special flyers, or what not, and in this way keep themselves constantly in the public eye.

John Cheape & Son, ready-made clothing men, come out frequently in print with alluring statements that cannot be overlooked concerning their goods, and the general public soon comes to know of this firm by name and location, and almost unconsciously to associate it with low-priced wearing apparel whenever the word clothing is mentioned.

What is the case with, say, a special class of the same community who, though it may not be attracted by the particular style of advertising put out by John Cheape & Son, can, nevertheless, mentally locate them with equal promptness and precision?

Why, this class is catered to by a more select purveyor of wearing apparel. At certain seasons, and followed at regular intervals, this class is besieged with more or less ornate steel-plate or copper-plate invitations to examine some "recent importations of exceeding merit," some new style of spring garment, or what not. Now, in getting out these special announcements, the tailoring establishment of H. Elegant Dresser & Co. is doing the same thing that Pan, Handle & Co. or John Cheape & Son are doing, only that they go about it differently, and direct their efforts through other channels to other ends.

How many photographers make *any* systematic attempt to reach the public through any channel? And why should not an effort be made to increase materially the output of photographers in the same way that consumption of other goods and commodities is stimulated?

Does the tintype man get all the work he wants without any effort beyond the nailing up of a frame or pictures outside his door? Does the $3 per dozen man roll in wealth from the accumulation of orders that seek him out, regardless of his unwillingness to extend his business? or does the specialist have nervous prostration from seeking to avoid the influx of customers anxious to place orders for cabinets at $15 per dozen, and individual prints at any old price? No, they don't either of them suffer from any of these troubles; but one and all of them might, if they would put into operation some well-digested plan of publicity, come much nearer to doing a satisfactory business each year than many are doing now.

There are exceptions to every rule, and it is said that the exceptions prove the rule. No better evidence of the truth of this statement can be found than is shown by a careful canvass of the so-called successful photographers of the present day and generation. They are almost without exception men who have believed in publicity, who, seeing its importance and necessity, have employed it in one line or another, and whose success to-day may be clearly traced to its judicious use. The methods they employ are various, but they are *all* aimed at the public through one or another channel.

One of the first objections often raised by the photographer when the question of advertising is broached is the statement that "he does not need it; he can hold his

trade without it." It does not seem to occur to him that the main purpose of advertising is *not to hold present trade*, but *to extend the lines and introduce new customers*.

If, to go back to our former simile, the hardware concern were entirely dependent upon its last year's customers for its future prosperity, it would not pay to advertise; neither would it pay the high-class tailor to send out his periodical announcements after the first issue.

The whole secret of success in advertising depends upon the fact that the advertising matter creates an interest in the goods advertised, which constantly stirs up *new trade*. The announcement of the hardware concern coming under the eye of the housekeeper perhaps produces no definite impression until it has been several times repeated. The thought then dawns upon her that the advertisement has a local meaning and a definite interest to *herself*. While she may have realized that the kitchen hardware needed replenishing, the question of facing the issue had been an abstract one until, by the persistent appearance of this announcement, varied in wording from day to day, the idea gradually shaped itself and took a concrete form.

The result of this awakening was made evident to the advertiser by her visit and order.

So it is in cases like that of the high-class tailoring establishment. Persistency of attack counts for much, and the regularity of its coming is sure to produce an effect upon the recipient.

Another advantage of persistence, always availed of by good advertisers, is in the fact that the advertising matter, being received at frequent intervals, meets the eye of the observer under different mental conditions, and in some one of the moods it will produce its best effect. A single issue or even a limited number might fail to strike the reader in a receptive mood, and its best effect would thus be lost. Still another, and, perhaps, the strongest feature in it all, is that these announcements of all kinds serve to *create*, in the minds of their readers, a desire for the goods advertised, which had not before existed, or if it had existed, was in a dormant state up to the time of seeing the advertisement. It is the constant reminder of the new goods that creates the desire in the mind of the buying public to see and possess those goods; and if these conditions exist in the general field of advertising, why should they not be applicable to the field of photography?

There are none who do not appreciate and desire good photographs of themselves, their families, and their friends. There are, however, many in whom this desire is dormant and in whom it only needs to be awakened to result in orders. The matter must be put in concrete form and so placed before the public that it will assume the shape of a personal message to the largest number of the community possible. The means of awakening this normal desire lies in the hands of the photographer who, if he will use them, may materially profit by their use. They are many and varied, and the methods that might in one community be successful would, perhaps, be futile under different conditions. All these things must have careful study, and the style of publicity to be used, the medium through which it shall be made public, and all details connected with it should be as carefully considered as the building of a new skylight or any other detail of actual studio work.

The whole question sums itself up in the statement that, as the photographer has invested time, labor, and capital in the equipment of a business fitted to produce a line of goods universally desired, it is clearly "up to him" to make it known far and near—to publish and exploit the fact by every available means and in every possible way that he can find.

If this be true, it will serve as a valid reason for the several articles that will follow this. If the premise is false, then the wisdom of the most brilliant business leaders in the land is but expensive foolishness. Which is it?

F. Dundas Todd has blossomed out as an expert in horticulture. See the articles "A Beginner's First Year in Flower Gardening" in recent issues of Todd's hobby-horse, *The Home Bazaar*.

REDUCTION AND INTENSIFICATION: A BRUSH METHOD.

BY F. M. STEADMAN.

In compliance with the wishes of many friends at the Indianapolis and Boston Conventions I herewith give a description of my method of reduction and intensification as demonstrated at those meetings.

Reduction. Pound up in a cloth or mortar a small quantity of red prussiate of potash, and keep it in a dry state in a bottle or small, round, wooden box, the lid of which may be used for measuring with the eye the small quantity that is to be mixed from time to time in doing the work.

To use, pour into the lid about as much as can be picked up on the half-inch of an ordinary knife-blade or about the volume of a pea, tip the lid sideways, and notice its bulk, and the same amount can be judged afterward by the eye alone. Empty this into a small graduate and add water to make two drachms; crush and dissolve with the aid of a small stick.

For local reduction use the common quill brush, about three-quarters of an inch long. Lift with the brush and squeeze into another small vessel about six brushfuls of water, and add to it one brushful of the stronger solution.

The first strong solution is for reducing or eating down small planes that are too thick in the negative, such as white flowers on hats, white ties, wedding gloves, opaque reflection spots, etc. The weaker solution is to reduce larger planes, as of white drapery, parts of background, lower parts of half or three-quarter figure negatives to make the appearance of shading off below (this, however, should have been done in the lighting and not left for the reducer). Also certain parts of view negatives, such as skies or other desired planes, and thick parts of negatives too strongly developed in cases where the subject was too contrasty in its actinic value and overexposed to get detail in the lower parts of the image.

To Use. The negative should have been developed with a developer which does not stain the film, and fixed in a freshly mixed bath of hypo. As photographers generally use a large hypo bath renewed as needed, from time to time, a plate to be reduced may be laid for a moment after fixing in a small tray with about an ounce of hypo dissolved in four ounces of water. (Powdered hypo is fast growing in favor by reason of the speed with which it may be dissolved.)

Lift the plate from this bath, and to reduce a small plane with the strong solution wipe the excess of solution off from the part to be reduced. Lift a brushful of the strong solution, and press it half out of the brush against the side of the graduate. These two precautions are taken so that the solution will not "run" when the brush is applied to the small plane to be reduced.

It is desirable that the negative should be held level during all these operations, and in order to do this the light must come from below. Fine work can never be done by looking through a negative directly onto or against a flame of light. The following method is much better: Cut a good, large-sized candle to about two inches long, and set it upon a white cardboard laid on the table. Then place some object, such as the lid of the dark-room lantern, so that the flame itself is hidden from the eyes and also from the plate. Work the plate horizontally between the lighted card and the eyes. If films are used, lay them on a clear glass, taking care that the emulsion side is uppermost.

Apply the brush carefully to the part to be reduced until it is brought down to the desired opacity. Take great care to get the edges well down with the centre. Practice on worthless negatives until confidence and skill are obtained.

To reduce larger planes lift the negative from the hypo, but only drain it slightly, and apply a brushful of the weaker solution swiftly over the part to be reduced. By practice each worker will develop a characteristic method of handling the brush and mixing the solutions and securing his results. The greater the power in any method the more care is necessary in using it, and the greater danger of spoiling results by carelessness.

For General Reduction. Take red prussiate of potash the size of a pea; hypo

five or ten times as much, and dissolve in two to four ounces of water. Lift the plate from the hypo bath, give it a dip in water, and lay it on a tray. Pour the solution over it until it reaches the proper density. A string or thread laid across the tray before placing the plate in it will serve to raise it up so that the fingers may be kept out of the reducing solution.

After reducing is finished, either local or general, the plate or any certain part of it may be intensified after it has been rinsed in three or four waters, or held under the tap for a minute.

Intensification. Secure a one-pound bottle, with a large mouth and a glass stopper. Place in a mortar one drachm of bichloride of mercury, and pour over it about half an ounce of water. Grind thirty or forty turns with the pestle, and pour the solution off into the bottle. Repeat this operation until all the mercury is carried off with the water.

Rinse the mortar and place in it one and one-fourth drachms of iodide of potassium. Pour a little water over it, crush and dissolve, and add to it the bottle with the mercury. (A little water will dissolve it all, likewise the hypo.)

Rinse the mortar and place in it two drachms of hypo, dissolve in a little water and add to the bottle, when the solution will become clear and will be ready to use. Use separate brushes for reducing and intensifying.

Use full-strength solution for certain heads in groups which have remained too thin, or for any other small part which it is desired to build up. By exercising care even the hair or a hand against a white drapery may be strengthened. A negative of white draperies may sometimes be better balanced (if it has been developed correctly for the draperies) by intensifying with the brush, face, hands, and background all around the draperies.

If it is desired to intensify the whole of a negative generally the solution may be weakened to a speed agreeable to the user.

Nothing can possibly be gained by waiting from four to ten minutes for the intensification of a negative when it can be done as well in from thirty seconds to one minute. At full strength, for local or brush use, the fresh solution will act in a very few seconds.

Great care should be exercised in mixing, storing, and handling these solutions, as they are extremely poisonous. By suggesting the use of such strong solutions I do not wish it understood that one may be careless in their lighting and in the creation of their values in operating, and then trust to this method for the correction of the errors; but rather that we should use it to *still further* improve the quality of our results after all that is possible has been done before.

An intensified negative is practically permanent if the following points be observed: Fresh hypo bath each time; thorough fixing, at least twice as long as it required to take away the white color from the back of the plate or film; thorough final washing.

In handling films it is essential that they be kept moving in all baths to ensure even action. Always place the emulsion down, and keep them moving by pulling out the bottom one, laying it on top, and tapping it down so that the solution runs over it. When allowed to lie still in any water or bath, they cling to each other by suction in some spots more than in others, and the liquid is forced away from those spots which do not become fully acted upon.

This lying still in the developer forms spots of greater transparency than the parts around them. In the hypo these spots, although they may finally be fixed out to the satisfaction of the eye, are still always less fixed than the parts around them, and when such negatives are intensified in a year or less they begin to turn yellow, *and always in spots exactly corresponding to the general character and size of the spots which fix last in the hypo bath by reason of the adhesion of the films to each other in that bath.* This proves the necessity of thorough fixing and washing.

If films are left quietly in the last or glycerine bath the same thing occurs, but in this case the result is that the films will cockle in the printing-frame. The edges will seem to have more film in them than certain spots in the centre. This is true, as the edges have been relaxed in size by the glycerine, while the spots have been left without expanding. Wet a stiff piece

of writing paper all around the edges, leaving only a dry spot about the size of a dollar in the middle, and then try to press it down evenly between two pieces of glass, and the same trouble will be encountered and for the same reason. If any difficulties arise in the working of this method they may be reported to this magazine, and I will gladly do what is possible to explain them.

RED SPOTS ON ARISTO-PLATINO PAPER.

BY A. HELMOLD.

THE immersion of the print in the first washing water decides the fate of the picture. If anything goes amiss in the first washing there is trouble, and it has come to stay. Clean dishes, clean hands, utmost care to keep the film side of the paper undefiled, are requisites understood by all, and no doubt observed by the majority of photographers, as are the instructions that come with the paper. Yet in spite of all this care spots will show up. Some photographers tell you that they are not troubled that way at all. They are lucky, indeed. If you ask them how they avoid the mischief, they answer: by cleanliness and by following the manufacturers' directions. Ask them the cause of the spots in cases where all known rules to prevent them have been strictly followed, and they cannot tell you.

No doubt every photographer working Aristo-platino paper can tell you, when examining his washed prints before toning, where, if any, red spots will appear on the pictures. If the washing water evenly covers the whole print when lifted out of the water, he knows that the toning will go on all right. If the print, on examination, shows patches which persistently repel the water, the photographer knows that by the same token the toning solution will be repelled in those places, and red spots will result, which are hard to get rid of.

Now, then, what causes those greasy-looking spots and patches? Faulty immersion in the first washing water. The water failed to cover the surface of the print in all parts simultaneously from some cause—perhaps, and most likely, the way the paper was held, perhaps bent by the photographer while immersing it, thus hindering instant contact with the water in parts of the print, which is as fatal to the resulting picture as even a momentary halt in the immersion of a wet plate into the silver bath, or the crawling of the developer was when working the wet collodion process.

By paying attention to the absolute necessity of obtaining instantaneous contact of the entire surface of the print and the first washing water we shall avoid all greasy-looking spots and patches, which are the root of the evil. I know of no better way of applying the first washing water to the entire surface of a print instantly all over it than to place it on a wet glass plate and wash it under the tap. A few moments will suffice to render the surface of the paper as smoothly covered with water as ever a collodion wet plate came out of the silver bath when fully sensitized. There will be no sign of greasy-looking patches or streaks; and that once attained, there is no longer any danger of red spots. I wish I had known this years before.

Of course, those photographers who somehow have acquired the knack of placing the prints into the first water in a satisfactory manner, and are never troubled with red spots, will very properly go on in their usual way of working the paper. The tracing of the causes of the red spots may, however, interest them. Finger marks, grease spots, etc., have no *raison d'être*—there is no excuse for them.

Several means have been discovered to effect the drying of a negative quickly in a case of emergency. Soaking the plate in alcohol is one of the best. A strong hardener is also serviceable, as it admits of the application of heat to the negative.

A short time ago I stumbled on another method, that since then has stood me in

good stead. I surface-dry the negative with a lintless cloth or lintless blotting-paper, then coat it with plain collodion, allow to set some little time, and then use moderate heat to dry the negative, which takes but a short time. The heat will soften the gelatine, of course, but the collodion, binding it down, prevents its running, every particle being kept in its place. The collodion may be dissolved, or the plate be coated all over with retouching varnish subsequently.

MORE ABOUT MARIOTYPE CARBON PRINTING BY PRESSURE.

AT page 266 of our June issue we republished from the *British Journal of Photography* an article calling attention to a method of obtaining carbon prints by pressure, invented by M. Marion thirty years ago and apparently allowed to lapse without practical application. In republishing the method as worthy of experiment we stated that the original communication of M. Marion could be found in the *British Journal* for 1873. A subscriber requests us to reprint this original communication because of the difficulty of obtaining the back number referred to; this we do forthwith, presenting also an editorial from the *British Journal* of May 23, 1873, commenting upon the then new process.—EDITOR W. P. M.

TWO NOVEL METHODS OF CARBON PRINTING.*

I have the honor to submit to the attention of the Photographic Society of London two novel and original methods of producing pigment prints. They are of a most practical nature and may be defined as partaking of the qualities of the well-known carbon method and the collographic process. I have named them "Mariotype by Pressure" and "Mariotype by Contact."

For Mariotype by pressure a simple vertical press is necessary, such as is employed for collographic or Woodbury printing. Only one single exposure under a negative is required, the image or printing block thus obtained serving to transmit the sensitive action to the pigment paper, which gives rise to the picture and transfers it to the paper support.

A Mariotype sheet (D) of gelatine of a matt-white color is sensitized on a 4 per cent. solution of bichromate of potash, dried and exposed under a negative* for a suitable period, the image produced being a visible one. This sheet is next put into another bichromate bath of the strength of the former one, the result being the same as if it were dipped into cold water. Those portions of the gelatine sheet which have not been acted upon by the light swell up, while the solarized parts remain as hollows upon the surface, according to the degree to which the same has been acted upon.

The gelatine sheet is taken from the bath, freed from any excess of moisture, and is now put into the press ready for printing from. Instead of applying ink to the block as in the collographic process, an alum-bichromate solution is made, composed of

Water	100 parts.
Chrome Alum	2 "
Bichromate of Potash . .	2 "

This is applied with a sponge and the excess removed with blotting paper. A piece of pigment tissue is then put under the face upon the printing block, impregnated as it is with alum-bichromate solution, and the two surfaces screwed together.

Afterward the pigment tissue is withdrawn from the press and another piece substituted, the printing block being first moistened again with a sponge full of alum-bichromate solution, and the excess removed with blotting paper. In this way an unlimited number of copies may be produced, the pigment tissue becoming impressed or solarized, so to speak, in those parts corresponding to the design with which it has been placed in contact. All

* Communication to the London Photographic Society.

* We presume that the word negative is *lapsus pennæ*, the transparency being really required.

of the operations must be carried on in a locality sheltered from glaring daylight; but when the invisible images upon the pigment tissue have been produced they are placed for a few minutes where the light can act upon them. They are then ready for application to their support-coagulated albumenized paper.

The printed pigment tissue is plunged into cold water together with the albumenized paper and then withdrawn in contact, placed upon a glass, and rubbed with a squeegee. The development of the image is next undertaken by the aid of warm water of a temperature of 40° to 50° C. The half-tones are admirably preserved, and the print, contrary to what happens in collographic printing, is produced in its true aspect because, of course, the transmission of the image goes from one surface to the other, or, in other words, an impression and counter-impression are produced. In the daytime a large number of prints may be thus produced by pressure, exposed to daylight for a few minutes required, and the rest of the operations may then be pursued during the evening at leisure. In about an hour as many as fifty carbon prints may be obtained equal and uniform in their nature, and this, too, by simply one exposure to the light to obtain an image to serve as a printing block, the pressure of a piece of pigment tissue in contact being sufficient to produce copies therefrom.

Mariotype by contact is different in its nature. It is well known that in ordinary carbon process at least two descriptions of paper are employed—pigmented tissue and transfer paper. A third is sometimes used for an intermediate transfer, or as a provisional support to the image.

In producing pictures by Mariotype by contact no transfer of the image is necessary, and yet the print is obtained in its true aspect. Instead of sensitizing or exposing the pigment tissue, I sensitize and expose the transfer paper. The image is then produced in its proper aspect just the same as in silver printing, but the image is of a pale-brown tint without vigor. The paper which I employed for transferring is of a very slightly gelatinous nature (C), although I think it should be better to have it albumenized, waxed, and gelatined, and this is floated upon a 6 per cent. solution of bichromate of potash to which a little sulphuric acid has been added for about one minute.

When dried the paper is exposed under a negative for a sufficient time, the image produced being visible and capable of examination from time to time by opening one of the covers of the printing frame. A piece of pigmented paper of any desired tint is then put into a 2 per cent. bath of bichromate of potash, together with the printed transfer paper, and the two are withdrawn in contact, and scraped with the squeegee to ensure perfect adhesion.

In this condition the prints are allowed to remain pressed together between sheets of blotting paper under a weight for a period of from eight to ten hours. Surfaces placed in contact in the evening may be developed next morning; and the more prints there are, the more chance there is of success, for they must not become dry in contact. It is well, of course, that all the prints pressed at one time should be of the same dimensions.

Under this slight pressure a continuation of the solarization goes on by transmission; for when the pigmented paper comes to be developed, the picture appears fully printed or toned, if you like, and in its right aspect upon the transfer paper. The development of the prints is conducted in warm water (about 40° to 50° C.).

The washing away of the gelatine and pigment is aided by a fine brush, or, better still, by letting the print remain face downward in the warm water for a period sufficient for its complete removal. In this way the half-tones are secured in their most perfect condition—is neither transfer nor reversal of the image. The development takes place from the face, and not from the back of the image, as is the case in the transfer process; therefore, the half-tones remain adherent to the paper in all their integrity, exactly in the same way as in silver printing.

Although the photometer is no longer an object of the first importance in this process, it is nevertheless very useful, because the image is very pale when seen upon the paper, and the limit of exposure is easily exceeded. By using the photometer the time may, of course, be limited. A pre-

liminary essay will point out the degree upon the photometer scale to which the exposure to light should be pressed.—*British Journal of Photography*, May 23, 1873.

MARION'S NEW CARBON PROCESSES.

Two new carbon processes by M. Marion, of Paris, were formally introduced to the British public through the medium of a paper read at the meeting of the London Photographic Society on Tuesday evening last.

The first, to which we shall especially direct attention, is one that does away with the necessity either of printing from the back or of reversing the negative. It is a process analogous to silver printing, although it differs entirely in the agents employed; and if this process is not to overthrow all old methods, it is destined in our opinion to form a new point of departure.

The process is as follows: A sheet of paper is coated with gelatine and dried, a substratum of plain albumen having been previously applied to the paper. The principal object of the albumen is to ensure adhesion of the gelatine. Paper thus albumenized, when dry, is floated on or immersed in a 6 per cent. solution of bichromate of potash, to which has been added a little sulphuric acid, for upward of a minute. It is then dried and is exposed under a negative for about a third of the time required in silver printing, or about the same as is required in ordinary carbon printing. The progress of printing may be watched in the same way as in silver printing.

The next operation is a curious and very beautiful one, and is dependent upon the continuation of the action of the light when once started in a film of gelatine and bichromate of potash, recently so ably expounded and cleverly applied by Lieutenant Abney. In a second bath of bichromate of potash of the strength of only 2 per cent. are immersed both the print obtained in the manner just described and a sheet of ordinary pigmented paper, or carbon tissue as it is sometimes described. When both sheets are thoroughly wet they are pressed in close contact, face to face, by means of a squeegee. They must remain in contact for several hours, the time varying from twelve to thirty hours. The action that takes place when these two are in contact is as follows: The light absorbed, so to speak, by the first sheet during the time it was exposed in the printing frame continues its action on the surface of the second, changes place in intimate contact with it. This continuous action only takes place while the papers are wet, therefore care must be taken to prevent their becoming dry. This is ensured by placing several of the sheets together between plates of glass, or by other similar means.

When this action—for which we need scarcely say no light is required—is completed the two adhering sheets are placed in a bath of warm water and separated. The pigmented paper is thrown away, a portion of the pigment being now attached to the print originally produced to the printing frame. By agitation the warm water immediately develops the image, which has precisely the same appearance as that of an ordinary carbon picture, with this great difference—that the image is not reversed, but is the same as a silver print. Nothing could be simpler, more practical, and rational.

This process certainly offers elements of practical success such as have hitherto been wanting in carbon printing. The mass of photographers could hardly take the trouble, even could they be at the risk and expense which the reversing of the negatives entailed, and hence carbon printing has never made any great progress among photographers as a body. We commend, therefore, M. Marion's process to their attention. With the facilities now afforded for obtaining tissues, the experiment ought not to be an expensive one, and many might give a new impetus to their business if they could produce cheaply and with ease permanent photographs.

The indefatigable Frenchman, who has for a long period been an enthusiast in all the new processes of photography by carbon, has also described another of his modifications, of which, pending a fuller publication next week, we think it well to give an outline in anticipation of our readers.

In this second process of M. Marion's a transparency is used, instead of a negative,

and the print is made upon a sheet of gelatine about the thickness of a card, and rendered white by the admixture of some pigment. This gelatine is sensitized on a 3 per cent. solution of bichromate of potash. It is exposed till the image appears thoroughly well brought out. It is then laid upon a plate of zinc or glass, to which it is attached, and is sponged over with a 2 per cent. solution of bichromate of potash, to which is added some chrome alum, the superfluous solution being removed by a squeegee. A sheet of ordinary unsensitized pigmented paper is now laid down upon the partially swollen image and is pressed in contact with it for an instant by means of an ordinary type printing press. The contact of the moist chrome alum and bichromate renders the surface of the pigmented paper insoluble in a degree in which these agents are pressed against the surface; and this need only be attached to the sheet of plain white paper and developed to yield a carbon print having every gradation of tone.—*British Journal of Photography*, May 16, 1873.

THE WORLD'S PHOTOGRAPHY FOCUSED.

A COMPLETE list of the different varieties of photographic gelatines supplied by the well-known firm of Nelson may be useful to our readers who dabble in experimental work:

"SPECIAL E LEAF." A hard gelatine, specially manufactured for making gelatino-bromide emulsions. Can be used mixed with a softer gelatine if necessary, but when used by itself gives increased speed to the plate together with great density.

"No. 1 PHOTOGRAPHIC." A soft gelatine used to a very large extent both for dry plate and paper emulsions. Must be used mixed with a harder quality gelatine.

"No. 2 PHOTOGRAPHIC." Recommended especially for gelatino-chloride emulsions, for collotype work, etc.

"AUTOTYPE." Specially prepared gelatine for all carbon work.

"D. I." A gelatine recommended by many emulsion makers for the manufacture of dry plate and paper emulsions.

"X OPAQUE." A hard gelatine, useful for collotype, heliotype, and similar processes, and in the manfacture of dry-plate emulsions where a hard gelatine is required.

RAPID PRINTING ON PRINT-OUT PAPERS. An English trade printer writes to the *British Journal of Photography* as follows:

Gentlemen: Having now completed a process I have been working on for a very long time, for the rapid printing of P.O.P., I am pleased to be able to tell you that I can now produce prints on this paper with the rapidity of bromides by artificial light. Seeing the great skill that has been brought to bear of late years toward increasing the speed of plates, it is rather surprising that some attention has not been paid to paper. We have plates now on the market that will take an exposure of 1-1000 second, but if we want a dozen or so prints in P.O.P. we must needs wait a week or so for them. By my process I can take two or three dozen prints from a negative in a couple of hours. I simply expose and develop exactly as for bromides. I find I can obtain any tone, and the character of the print is very much under control; thus a bright print can be got from a weak, flat negative, and a soft one from a hard negative. By this process I am now able to guarantee all orders up to a dozen in one day, which should be a boon to the professional.

I enclose you a couple of prints from the same negative, to show there is no trouble in getting them even. These prints had an exposure of fifteen seconds.

Yours faithfully,
H. E. S.

[The prints enclosed in our correspondent's letter are extremely rich and even specimens of work.—EDS. B. J. P.]

The American professional, with the Keystone Electric Printing Machine, described in our last issue, can do this work for himself instead of sending his negatives away to the trade printer. The K.E.P.M. is worth looking into.

THE KINDERGARTEN

By C. R. Reeves, Anderson, Ind.

PROFESSOR LORENZ

A famous Viennese Surgeon

Copyright, 1902, by F. Gutekunst, Philadelphia

THE LATE POPE LEO XIII

From Ugolini's painting, owned by Archbishop Ryan

By F. Gutekunst, Philadelphia

PHOTOGRAPHY

Sun-wrought with magic of the skies,
The image fair before me lies:
Deep-vaulted brain and sparkling eyes,
And lips fine chiselling.

O miracle of human thought,
O art with newest marvels fraught—
Apelles, Nature's rival, wrought
No fairer imaging.

—Leo XIII. Translation by H. T. Henry, Litt.D.

PORTRAIT
By E. L. Mix, New York

READY FOR THE PARTY

By C. F. Stamper, Boise, Idaho

First Prize State Fair, 1903

PORTRAIT OF MR. FRED. RADFORD

Illustrating his article on "Tone Values" in this issue and showing the advantages of his Diffusing Device applied in portraiture

Illustrating the article on "Tone Values" by F. Radford in this issue

Made with the Radford Diffusing Device

The same view without Diffusing Device

Illustrating the article "Tone Values" by F. Radford in this issue

TONE VALUES IN PHOTOGRAPHY.

An Article on the Separation of the Planes.

BY FRED. RADFORD.

(With Illustrations by the Author.)

"WHAT is the difference between the expressions tonality and planes?"

Study the human face very minutely and you will see innumerable gradations of light and shade—thousands of different shades, in fact, from almost pure white to dense shadow—and each of the shades represents a tone which is in harmony with the tones surrounding it. Alter it ever so little and the effect is destroyed. A discord takes place.

To produce any of these tones the portraitist must be able to see them. If he is tone-blind he has no more chance of being an artist than any one without an ear for music has of being a first-class musician. It is this delicate sense of being able to discriminate between the tones that makes all the difference to the work produced in photography. Unfortunately for the art-loving world, this sense is in such a small minority that the works produced—at any rate, by photography—lack, with very few exceptions, any tone-feeling whatever in them, the cause being that the authors themselves are tone-blind. They cannot, consequently, give anything but effects in which the tones have been altogether obliterated. In schools where photography is taught one of the principal lessons should be on tone values. If the young student were taught this at the commencement of his studies there would be some chance of his being able in the future to give something to the world that would be worthy to be classed among the fine arts.

The planes may be called an optical illusion produced by viewing nature from two distinct points, the eyes, and to reproduce this illusion on a flat plane—viz., a photograph or canvas—some effect approximating to what we see with our two eyes must be produced; otherwise we still have the solitary plane, the straight up-and-down photograph or painting. Nothing we see is definitely sharp, but it is very nearly so; so do not try and throw everything out of focus, but make it not quite as sharp as it will go, and the result will be much more pleasing.

It is this slight difference in focus that constitutes the separation of the planes. No other method I know of will do this. I have two photographs before me, one subject very carefully chosen and well composed, but taken perfectly sharp; the other, just thrown off the sharp, and the difference is immense—the first flat and insipid, the other round and stereoscopic; one has no tone value, the other has the planes separated.

The present system of lighting the studio with the light radiating from something like half the arc of the heavens is decidedly at fault, as it tends to weaken the tone values of the face, and consequently makes them more difficult to photograph. A concentrated light is much better, and one that is well to the front of the subject. The best portrait I have had the pleasure of seeing is an etching by Rembrandt, which evidently was made by the light of a small window a trifle higher than the artist and only removed a little to his left. The amount of tone and feeling in that old etching is exquisite, and in my opinion has never been excelled and rarely equalled.

Never retouch your negative if you wish to produce artistic work. Remember, retouching is the destruction of tonality, and without tone your works are worthless. Any slight defect in the skin or false tonality caused by color may be remedied, but do not alter anything; the most that can be done is very little. Make the negative do all the work, not the pencil; study the human face and find out for yourself the amount of gradation that there is in it, and when you have found out this, try and obtain it on your negative; when you have produced some, at least, of these most delicate tones, you can honestly say that you have accomplished something, and that you are a rung higher on the ladder of art.

"OH, I AM AFRAID TO!"

BY CHARLES PERSONS MARSHALL.

YES, that is the plea the boy put up, shivering on the brink of the old swimming hole. The water looked cold, and there he stood with chopping teeth and knocking knees. The longer he waited and debated the harder he chopped and knocked. Then, losing all vestige of courage (it takes considerable for some boys to even creep out of their clothes and stand on the edge) he slid back on the green sward, tumbled into his trousers, and crept off to nurse his stone-bruise and snooze away the rest of the beautiful day.

The other boys braced for the change, plunged right in, and enjoyed a splendid swim in the invigorating water. When they leaped on the bank and jumped into their clothes they felt a fresh force in mind and body. Singing and rejoicing, away they sped, winning happiness and recompense the rest of the beautiful day.

"Oh, I'm afraid to!" is the same song, sung by hundreds of photographers who shrink from bracing up—making a change in their pictures (I mean changing from mere photographs to real pictures). They dread to disturb their regular routine of set sizes, coated papers, etc. They have slid in the old slot so long they shudder at the jolt necessary to jar them out onto the broad, free track.

This reminds me of the fable of the ant. "There was once an ambitious ant which, by good behavior and industry, prevailed upon Dame Nature to change her into a larger animal. To test her wisdom, Dame Nature said: 'You may have your choice, to be a trout or a swallow.' Instantly

COMMONPLACE ALL THE WAY THROUGH, EVEN IN NAME.

"STUDY OF TREES." A view.

Simply a likeness of lumber. A print like this is dear at 25 cents, and is useful only to help sell the trees.

the ant replied, 'I will be a swallow.' 'Why?' asked Dame Nature. 'Because,' said the ant, 'the trout swims up and down his narrow brook, and has only such food as floats to him, and is an easy prey for the angler; but the swallow is free to fly and skim where he will, finding food on every side, and has ample chance to escape the hunter.'"

Some people are like *rolling* barn-doors, they need a groove to run in. And should they wish to become free, swinging doors, they discover they have lubricated the groove with the oil of indifference so long it is quite difficult to get out of the rut. They need sand, pebbles, or some other strenuous shock right under their wheels to shake them out and mount them on free hinges.

There is a slow fire consuming their fibre. Between the *famine* and the fever they are paralyzed with the "horrors." Like the boy on the bank, "between the devil and the deep sea" (the stock dealers' "say so," and the sheriff's shadow), they shiver and sigh, "Oh, I'm afraid to!"

Now, laying aside all levity, it is lamentable the number of timid and despairing photographers who dread to make a change in methods or materials. They expect the shock will shatter all. Instead, regardless of anticipatory chills, if they but take the plunge they will experience only an invigorating startle, then forge through the bracing waves of knowledge, gaining strength with each stroke.

Somehow this brings us around to the subject of prints. Yes, prints; for the world judges by prints, not by paraphernalia. And the small percentage of pictorial prints issued, in comparison with the avalanche of commonplace photographs ground out at every swing of the pendulum, will, for sometime to come, keep this topic warm with discussion.

"How many cabinets a day can you make?" is gradually giving way to "How good a print, a print with pictorial qualities, can you make?" when the employer is interrogating an applicant.

Tone, too, in the chemical sense, has been the burden of photographic song for

PICTORIAL TO THE CORE, IN TREATMENT AND TITLE.

"THE WILLOWS." A picture.

A portrait of weather-beaten warriors. The man who made it receives $2.00 to $2.50 for each 9-inch platinum print. He sells a good many of them, too.

a long time. Now, the melody is changed, and temperament attracts attention. Photographic printing without a temperament back of it cuts a small figure in mind and money among leading professionals and amateurs, and will continue to cut even a smaller figure as the years pass.

It is impossible in this short space to go into the depths or present the beauties of pictorial printing. But just to give a slight suggestion of the possibilities of picture-making in the hands of a trained printer, I present two illustrations. Perhaps it is needless to refer to the well-known fact that no half-tone engraving can present full pictorial qualities—textures and values alike suffer in the process. However, the difference in the illustrations is somewhat apparent, and in a measure hints at the absence and presence of pictorialness. In this instance I have chosen landscape rather than portraiture. Although the latter is capable of just as choice treatment and rare effects, the former seems especially in keeping with *this* summer, which, owing to the copious showers, has never been surpassed as a landscape year.

THE LENS IN PORTRAITURE.

THE portrait lens has been strangely neglected by photographic writers, despite the many important points involved in its selection and use for various classes of subjects. As a natural consequence of this, the majority of professionals are densely ignorant concerning the most vital factor in the technical part of their work under the skylight. The subjoined chapter on the portrait lens is taken from a text-book on *Photographic Lenses* by Conrad Beck and Herbert Andrews, recently published, and impresses us as a clear and intelligent exposition of the subject.—ED. W. P. M.

Portraiture more than any other branch of work calls for special apparatus and lenses. It is true that a fine portrait can be taken with a common lens. It is difficult, but it can be done. A machine or instrument of any sort is not so important as the person behind it, but the beginner who is going to take up portraiture seriously cannot afford the time to learn to use a bad instrument—life is too short—a proper choice of lens will greatly help toward success. With an unsuitable lens, even the experienced professional, who has all the advantages of lighting, backgrounds, accessories, and costumes, may find difficulty in producing artistic results, and no excuse is required for entering somewhat fully into the subject.

Primary considerations:

(1) Focal length; (2) rapidity; (3) definition.

(1) Focal length. Whatever the type of lens that is employed, its focal length is a matter of great importance. Upon it depends the truthful rendering of the different portions of the sitter and much of the correctness of the modelling. In dealing with photographs of the head and shoulders a total distance of some eight or nine inches in depth will have to be almost equally defined. The nostrils, eyes, ears, and back of the head have almost the same relative importance, and should be rendered with a similar degree of distinctness, though a trifle more brilliancy in the eye is desirable. The shoulders and chest are only of secondary importance, and less depends upon them in depicting the characteristics of the sitter. They are accessories, and, in order not to detract from the main interest, should be rendered with a less degree of definition.

The fact that the main aim of all photography which is not undertaken for purely diagrammatic purposes is to portray on a flat surface an object which possesses length, breadth, and thickness should never be forgotten; and the quality of the definition in the various planes of the picture can be made to play an important part in producing an appearance of solidarity. The eye, attracted first by the sharpest area of definition, may roam over the whole photograph, but will return again and again to the clearest part. If the whole is evenly defined there will be no rest for the eye, and the interest, which but for the fact that all is sharp, might have been riveted upon some salient fea-

ture, will be dissipated. Comparison between the "regulation" vignetted bust of some years back and a photograph by a modern artistic worker will emphasize the point. In the former case, whether it be the carefully-arranged curl on the forehead of the sitter or the fifth waistcoat button, the definition will be so equal and brilliant throughout that one is tempted to think that the photograph is intended for a fashion-plate, to show the latest cut of waistcoat or the newest method of hair-dressing. At best the result will be but a travesty and destroy all traces of personality. Now consider a second photograph, that of a man past the prime of life, with iron-gray hair and furrowed brow; notice the gleam of light on the hair, the softly-marked wrinkles telling of a life almost lived out. These have not been carefully removed by the soulless retoucher; the shoulders are softly defined, sufficiently so to suggest the stoop, while the old-fashioned stock, hardly discernible, forms a mere accessory to complete the picture. The quality of definition is soft, yet equal over the different planes of the head; the nose and chin are not unduly large or the forehead dwarfed by the use of a short focus lens. (See Fig. 1.)

FIG. 1.

From "Photographic Lenses," by Beck and Andrews.

A short focus lens possesses the quality known as depth of definition to such a degree that it might, at first sight, be thought to be useful to the portrait photographer; but it entails exaggerated perspective, which renders its employment unsuitable. Where it is employed distortion results; the sitter's nose will appear too large and the ears and forehead dwarfed, sometimes to such an extent as to make the likeness ridiculous. Reference to Fig. 2 will explain the reason for the distortion.

It has been explained that the shorter the focus of the lens employed the nearer the camera the object must be to produce a picture of a predetermined size. Suppose the lens A is of so short a focus that the sitter must be placed in the position shown in the diagram (Fig. 2). The ear will be photographed the same size as the end of the nose or half its correct size, because it is nearly *double* as far away. The lines in the diagram indicate the direction of the rays of light; all objects included in any cone, as A B C, will be photographed the same size. Similarly the height from the chin to the brow will be represented by this lens as nearly double that of the back

FIG. 2.

of the head, and the sitter will appear to have no cerebellum. When a lens having a long focus relative to the size of the picture is used, it will have to be placed much further from the object, and lines drawn from different portions of the sitter will now be represented by the lines D E, etc. In this case they will not converge so rapidly, and the front of the sitter's head will be included in only a slightly larger cone than the back. The ear will subtend a greater angle than the end of the nose, and the various portions will have their true relative value.

As long a focus lens as the studio will permit should invariably be used. A good length is three times the longest side of the plate in use.

For C.-D.-V. work . . .	7 to 9½ in.
For Cabinet work . . .	14 to 18 in.
For Promenade work . .	20 to 26 in.
For Panel work . . .	27 to 35 in.

The above figures are, of course, only approximate, and can be varied to a considerable extent. The scale on which the sitter is to be reproduced will vary according to whether it is to be a full-length study, three-quarters, or bust, and it is more particularly for the latter work that the above foci should be employed. It will be only those favored with long studios who can employ the lengths of focus therein recommended, and the focus used may be reduced to double the longest side of the plate to be covered without introducing serious distortion.

The length of studio required for the use of different focus lenses is appended in the form of a table.

In the table below it will be noticed that room is allowed for the camera, operator, etc., of from six feet to eight feet, and should the photographer know from his experience that this is insufficient more should be added to the suggested studio lengths. The employment of extra-long focus lenses for large-size pictures entails certain disadvantages which must be mentioned. These lenses are large and heavy, and difficult to carry about, while the camera must of necessity have a long extension. The price will also be high. Of recent years there has been an increasing inquiry for cheaper long-focus lenses, giving softer definition than the old Petzval type of portrait lens, and the half combinations of such lenses as the Beck-Steinheil Orthostigmat or the Biplanat, while only half the price of the whole, will double the available focal length, be somewhat lighter, and give excellent results for artistic work. . . . . There are, of course, limitations to the use of a single lens. Where rapidity is of importance these lenses are unsuitable, as, given sufficiently good corrections, they cannot be made as rapid as a doublet.

The experience of generations of professional and amateur workers in portraiture has demonstrated the fact that rapidity is often an essential for successful work in this branch. It is possible under favorable conditions to produce first-class results with a slow lens; but the conditions under which portraits are procured are generally such that advantage must be taken of every ray of light than can be included by the lens. Except for group

Focus of Lens. Inches.	Size.	Kind of Portrait.	Length of Studio. Feet.	Distance of lens from object. Feet.
6	Carte-de-Visite	Full length,	18-20	11-12
7½	Carte-de-Visite	Full length,	22-25	14-15
8½	Carte-de-Visite	Full-length,	24-28	17-19
		Bust,	10-15	5
9½	Cabinet and 4 × 5 groups,	Full length,	20-23	12-13
		Bust,	12-17	7
11	Cabinet and ½-pl. groups,	Full-length,	25-30	17-18
		Bust,	13-20	8
14½	Cabinet, Promenade and ¼-pl. groups.	Full-length,	32-40	23-24
		Bust,	14-20	7
19	10 × 12 Portraits of groups,	Full-length,	20 25	13
		Bust,	14-20	7
24	12 × 16 Portraits of groups,	Full-length,	25-30	14
		Bust,	14-20	8

work, which will not be here referred to, all negatives will be produced indoors in a studio with a northern light, and most of that cut off by blinds for purposes of modelling. Some of the finest artistic effects are obtained by using light coming from one source only, perhaps from an area of not more than six square feet . . . . high up in the studio side light, and placing the camera nearly opposite to the source of light, with the sitter between the light and the lens. This is the class of portrait to severely test the rapidity of a lens. There will be high light running down the profile, touching the neck and some part of the hair, while the majority of the sitter will be in shadow—shadow that must not be too opaque, lest the result be a silhouette, but clear and transparent and full of detail.

Out of doors a portrait of small size can be taken with an exposure of 1-80 of a second, at f/8 in a bright light. In a studio the light will be cut down, and, moreover, the sitter will be moderately near to the lens, so that the light affecting the photographic plate will perhaps be but 1-500 the intensity of that outside. Now the photographer is called upon to produce pictures of children and other restless creatures, so that short exposures must be given, for who can follow the working of the infantile mind and discover the psychic moment when stillness of face and limb are coincident and will continue so for a second or more? It is not with children alone that short exposures are the order of the day. Adults also are subject to attacks of the fidgets, and the photographer who was obliged to wait for stillness of the subject, combined with a satisfactory expression, could accommodate but a small number of sitters in a day. If the photographer is accustomed in the ordinary way to use rapid plates, the only method of further reducing the exposure is by the use of a rapid lens. A lens working at f/4 is eight times as rapid as one working at f/11, and an exposure of ⅛ second is correct for the f/4 lens when 1 second would be necessary for the other.

There is a point, however, to be considered. If a lens working at an aperture of f/4 is always stopped down to f/8 to insure satisfactory results, it is no more rapid than a lens the largest aperture of which is f/8; in fact, there are positive disadvantages pertaining to the rapid lens stopped down. Some photographers, when asked what aperture they use will tell you that they don't know, neither do they know the focus of the lens; they only know what result they want, and they know when they have got it; but the method by which the result is arrived at does not interest them. It may be found that they are using an f/4 lens of the Petzval type stopped down to f/8 or f/11, for which they may have paid—if it be a lens by a first-class maker—some $100 or $150. If they had gone to the trouble of finding out what aperture was the one most suitable for them to use, a lens of this aperture could have been purchased at half or quarter the price.

In the early days of photography, when the daguerreotype was in vogue, it was necessary to stand some thirty seconds in the blazing sun to procure a picture of any kind, and an increase in the rapidity of the lens must have been a veritable Godsend. Following that came the wet-plate process, still requiring exceptionally long exposures, and the Petzval lens, introduced at that period, with an aperture passing some thirty-two times as much light as the lenses then in use, was welcomed as a means of shortening the exposure and universally adopted. Old customs die hard, and even to-day the Petzval is the most popular portrait lens. It has little claim to be. The field is extremely curved, the definition is critical, too critical, and that over a very limited field, after which it falls away rapidly; it is subject to flare, and stopping down does not increase its good qualities to any great extent; it is heavy and costly, and only applicable to indoor work, groups and outdoor subjects being alike beyond its scope. Remembering that it is often used at from f/6 to f/8, there must be other lenses more suitable. Since the wet-plate days the rapidity of their "dry" relations has increased with leaps and bounds, and to-day the fastest plates are some one hundred times more rapid than the old wet ones, and there is no need to use a lens entailing so many disadvantages as the Petzval for a slight gain in rapidity.

A lens for portraiture should have an

available aperture of f/5-6, or thereabouts, at which it can be used without stopping down. A lens of this class, such as the "Biplanat," will do anything a professional photographer may require of it, including groups out of doors—where a fair angle is to be included—and it may be used with a smaller stop for landscapes; on the other hand, where a specialty is made of children's portraits there is no doubt that a larger aperture is required, such as f/4, and, this being the case, a lens embracing a larger angle than the Petzval, with a flatter field and more even definition, should be obtained. A lens of this type is the extra-rapid rectilinear. For adults a lens as slow as f/11 need not be discarded. For large heads there is no lens to touch the rapid single lens; the definition is delightfully soft and even, and the focus will, of necessity, be long if it is a half combination of a rapid lens, while the price, a consideration nowadays, will be much less than that of a doublet. For group work, whether indoors or out, a lens is needed that gives a flat field and even definition. Here again the Petzval is found wanting, and a lens such as the Biplanat or the Orthostigmat is recommended.

Quality of definition can be fairly considered as of primary importance in portrait work. The days of Daguerre have passed, and with them the necessity of placing the subject in the full glare of the noonday sun in order to reduce the necessary exposure. When this had to be done the lighting was beyond control. There was no modelling, and all that was wanted was definition—critical, diagrammatic definition. As plates became faster and the lighting could be controlled critical definition still held sway, although Dallmeyer introduced a form of the Petzval lens in which the requisite softness could be obtained by unscrewing one element of the back combination.

Latterly it has been shown that lenses can be made having the advantages of rapidity and flatness of field, together with a softer definition, while more brilliant definition can be procured by slightly stopping down. Examine any portrait by a great or, indeed, a less-known painter, and where will you see every hair in the eyebrow clear and distinct and every thread in the necktie or dress so plainly depicted as to suggest a merchant's sample? It may be necessary for a "photographer by appointment to the police" to present a cabinet portrait to his employers in which every hair is depicted—for purposes of identification—but this comes within the scope of copying rather than portraiture. Soft definition is essential for truthful work. This may be obtained by placing the lens slightly out of focus or by allowing the presence of a small amount of spherical aberration; but such an error must not be present in too marked a degree, or the picture will tend to show doubled lines at the edge of any white portion, such as the collar, and the examination of such a picture might suggest the idea that one has dined "not wisely, but too well."—*From Beck and Andrews' Manual on "Photographic Lenses."*

THE London Photographic Salon of 1903 will be held at the Dudley Gallery, Egyptian Hall, London, from September 18th to November 7th next. The prospectus tells us that the aim of the committee is to exhibit only that class of work in pictorial photography in which there is distinct evidence of personal artistic feeling and execution. Careful consideration will be given to all pictures entered for exhibition, and a selection of works of pictorial merit made by the committee. Pictures which have already been publicly exhibited in London will not be accepted. Pictures sent for exhibition to any other exhibition open in London at the same period are liable also to be disqualified. No awards are offered, and no charge is made to exhibitors. Exhibitors will be entitled to a season ticket. Arrangements will be made for the sale of pictures, if desired, and a commission of 15 per cent. will be charged on sales effected. The last day for sending in pictures is September 7th. Further particulars may be had from the Hon. Secretary, Mr. Reginald Craigie.

The American exhibits will, we suppose, be collected and shipped by Mr. Alfred Stieglitz, of New York, as in past years.

A REVOLUTION IN THE PRINTING-ROOM.

In recent numbers of this magazine we have already called attention to the Keystone Photographic Printing Machine, introduced by one of our advertisers. Having seen this machine in operation, and noting the simplicity of its manipulation, the successful results obtainable by its use, and other advantages, we would fain bring it more prominently before our readers, not to puff the goods of an advertiser, but to assure ourselves that they will not overlook a specialty of merit which should be immensely useful to photographers in the prompt delivery of orders during the forthcoming winter season.

Half the troubles of photography, as a business, arise from delay in the delivery of the finished prints, and nine times out of ten this delay is caused by uncertainty in the weather conditions or by failures in the making of uniform prints.

The printing machine under notice offers complete release from these difficulties, and, once installed in the printing-room, will enable the photographer not only to promise the delivery of finished prints at a much earlier date than hitherto, but actually to deliver them on the date promised. The apparatus is designed to print any of the various printing-out papers now used by professionals, such as as albumen, collodion and gelatine chloride, platinum, carbon, sepia, ferroprussiate, and similar papers. Apart from the skeleton-stand shown in the diagram, there is required only a single arc lamp for the printing of eight negatives, 11 x 14 inches, at one time, each negative being placed in one of the compartments of the cabinet, as shown. By this simple apparatus the manipulation of printing is enormously simplified, and the operation is quickly and easily accomplished, uniformity of result being obtained by the very simple means of making uniform exposures. In this way the cost per print is exceedingly small, and there is no room for failures or spoiled prints.

The apparatus is octagonal in form, occupying a floor space of 3 x 3 feet, and is constructed in a thoroughly substantial and workmanlike way. The arc lamp used is one specially designed for the apparatus. The rays from the light are exceedingly actinic and of purplish hue. The time required to make a print with the machine necessarily varies with different negatives and different kinds of printing paper, but about one-third to one-half the time required in bright June sunlight will usually be found sufficient. The apparatus is provided with sheets of ground-glass, by means of which the light may be very much diffused when desired or when weak negatives are printed from. By the aid of this machine the average order may be completely printed at one time, so that the prints may be all toned and finished

in one batch, which fully insures their uniformity and excellence. The special advantage of the apparatus in platinum printing is obvious, as the work can be carried on in a warm and, therefore, in a dry room, by means of which all danger of moisture or dampness is necessarily avoided.

The cost of maintenance is an impor-

tant item where the electric light is used. According to careful investigation made we find that the cost of the electric current varies from 12 cents to 20 cents per hour, according to the city in which it is used. Inasmuch as from 3000 to 5000 prints can be obtained with the Keystone Machine in the course of a week, it will be seen that the cost of the light is, in the end, nominal. More especially for photographers who do large quantities of commercial or school photography, groups, and similar specialties, the Keystone Printing Machine would seem to offer very definite advantages without any accompanying drawbacks.

Having thus pointed out the salient features of this invention, which we believe will in time revolutionize printing-room manipulation, we leave the matter with our interested readers for their personal investigation.

THE OHIO-MICHIGAN PHOTOGRAPHERS' ASSOCIATION.

THE Third Annual Convention of the photographers of Ohio and Michigan was held at Saginaw, Mich., July 22, 23, 24, and was a thorough success in every particular. While the membership was not large, the meetings and demonstrations were well attended. The close proximity to the time and meeting place of the National Convention was unquestionably the cause of many absentees. It gave rise to much comment and some discussion on the advisability of concerted action with a view to make State conventions and the National Convention biennial, each meeting in alternate years.

The opening day was devoted to an address of welcome by the Mayor of Saginaw, the address of President Bowersox, a talk on "Business Conditions in the Average Photographic Studio," by Mr. W. I. Scandlin, of New York, and another on "Elements of Pictorial Composition," by Mr. F. Dundas Todd, of *The Photo Beacon*.

In the evening the Association was entertained by Mr. M. E. Danforth at a vaudeville in one of the parks.

On Thursday morning demonstrations were given in the hall and also under the skylight at the studio of Beckman Bros. In the afternoon a business meeting was held, followed by a talk on "Practical Methods and Suggestions for Studio Advertising," by Mr. W. I. Scandlin. During the evening Beckman Bros. entertained the members at an open-air concert in Germania Park.

Friday was devoted to an informal criticism of the exhibits by Mr. F. Dundas Todd and the business session incident to closing the Convention.

Toledo, Ohio, was selected as the place of meeting of the next convention, and the date fixed for February, March, or April, 1895, in order to avoid clashing with the National Convention. The election of officers resulted in making Mr. C. L. Lewis, of Toledo, President, and in the re-election of the other members of the Board as follows: F. R. Bill, Cleveland, Ohio, Vice-President for Ohio; C. A. Beckman, Saginaw, Mich., Vice-President for Michigan; F. W. Wolf, Cleveland, Secretary, D. D. Spellman, Detroit, Treasurer.

A capital feature of the closing hour was an impromptu "Experience Meeting" in which a large number joined; studio methods, prices, and many vital questions were discussed freely and with much profit to those who were present.

A carriage drive was arranged for the ladies in the afternoon, and in the evening a banquet was given at the headquarters hotel, at which Governor Bliss, of Michigan, and other distinguished guests were present. A beautiful silver vase filled with flowers was presented to retiring President Bowersox on this occasion.

The convention was a practical gathering of workers, and much satisfaction was expressed on all sides. The exhibit of pictures was perhaps the only feature that fell short in any considerable degree. It was small and not up to the usual standard. Much of it was the work of new men, however, which accounted for the latter deficit.

THE RECEPTION-ROOM CLERK.

Her Field and Its Possibilities.*

BY MRS. RUBY BISSELL.

In the Oriental countries, where the natives worship idols in that form of worship which is called Buddhism, one of the main characteristics of their creed is "Do unto others as you would they should do to you;" and nowhere can this most excellent of rules apply better than in the everyday-work of the reception-room clerk. Let us consider the duties here found from a woman's standpoint. First, as to her personal appearance. We all know that nature does not always distribute her gifts equally as far as beauty of face and form is concerned; indeed, in some instances she seems very charry of such gifts, but even where this is the case one may still become attractive by cultivating the best qualities they possess to the extent that the unattractive ones sink into insignificance. One who is determined to attain success may here cultivate the wonderful depths of magnetic forces to great advantage. The power to draw out, the power to lead and the force to control are wonderful factors in the success of reception-room work. As to her appearance, there's nothing like the eternal fitness of things. The hair should be dressed in a simple manner, and the costume conspicuous for its neatness and unobtrusiveness; evening coiffure and discarded finery could no where be more out of place. As to her manner, she should be bright and wide-awake, most quiet and refined, for remember this is an art studio, and there is such a thing as an artistic manner.

Make Attractive Displays.

As to the room or suite of rooms in which she spends her time, much may depend upon her native taste. If her employer is a man of artistic taste (and we feel bound to say that he must be if he is a successful photographer), and if he has used money enough combined with his taste in furnishing those rooms, then it is the place of the lady at the desk to see that the best care be taken of these furnishings, and that most attractive displays be made; but, on the other hand, if the rooms are bare and unattractive, she may lead her employer through those same forces before mentioned to see that "seeming success ofttimes brings the reality" right here in the reception-room. She might lead him to see that money spent, say for a moss-green carpet, with side walls of green half-tones, with ceilings of cream and gold, a few modern, comfortable chairs, a suitable table or case for displays, a neat desk, together with pictures hung upon the walls in tastily-selected frames—pictures the best the studio could afford or produce—money spent this way is bound to return tenfold if the lady at the desk does the right thing.

Then, on the other hand, the room may be most plain and cheap, but, whatever the furnishings, it must be kept clean and fresh. This is the reception-room lady's duty, whether the janitor does it or whether it falls to her lot; to meet success it must be done.

A Nice Entrance is Attractive.

The entrance, as well as all displays, must come under her supervision also, and here, whatever the conditions, things must be clean. An entrance should be most inviting. As to displays, these, too, come under the care of reception-room girls. Much artistic taste must be used in arranging these displays, which need not, necessarily, be so large, but must be fresh and clean, as well as artistic. A display which continually attracts attention is surely all right. Many are the ways for showing pictures, and in some places inside as well as outside displays must be made under glass, as, for instance, in a college town that need is, perhaps, most often felt. I am sorry to say university students sometimes consider it quite a neat accomplish-

* Address given before the College Camera Club of the Illinois College of Photography, Effingham, Ill., by Mrs. Ruby Bissell, Principal of the Retouching Department, and republished by permission.

ment to carry away all pictures lying loose in a studio. Calling in numbers, a picture may be passed from hand to hand, and here the quick eye of the lady attendant comes in.

Watch for New Samples.

The maker of displays must ever be on the alert for new samples. These she will most frequently find as the prints come from the finishing department to be spotted and sorted. Selecting the best, she may make her wants known to the printer, who furnishes her with the extra print. For a window display, if on the ground floor, three or four large portraits with a dozen cabinets constitute a good display. These might be laid upon a covering of silkaline, which so nearly resembles silk, crushed into soft folds. This goods may be purchased in any of the delicate shades. Yellow is, however, the richest and most durable. Inside, a showcase or large table covered with a piece of plate-glass the same size as the table, laid over the pictures may be used. Displays should be changed frequently. A reception-room attendant should always be on time, and one of the first duties of the morning should be to plainly mark all negatives which have just come in, with proofs between, from the printer, with the order found in order-book, so that you may read at the bottom of the negative, written in ink, an order something like this: "Pierce, 1 Doz. A. P., No. 34,462." Another duty will be spotting of prints. The examining of prints for any blemishes and placing in envelopes ready for delivery. Two books are necessary at the desk, one for appointments and one for taking orders; the latter may be a register which contains space for, first, the number of negatives, then name, number ordered, style ordered, when promised, amount paid, amount due. Every order must be registered here. A case for proofs should also be placed at the desk. Now we are ready for the customer. In a little booklet, which is most artistically gotten up, perhaps by the aid of the ambitious reception-room girl, entitled "Suggestions to Patrons," we would gently hint that from 9 to 11 A.M. is the best time for baby's picture to be taken; so by 9 o'clock, all duties of the early morning attended to, the reception-room clerk begins to listen for "footsteps on the stair" or the click of the elevator. Presently the voice and footsteps of a child mingled with those of the mother may be heard approaching. The clerk steps to the door and opens with a polite greeting, seeking at once for the chair which would be most comfortable for the mother, not forgetting one for the youngster. Especially should the mother be made comfortable if she carries a child in her arms. Just such a manner should be worn by the clerk as a hostess would wear for her guest. The expression the subject will wear when the exposure is made begins to form just here. If the patron is made to feel that you are a friend rather than foe, your pictures will be more widely sought. If the order has previously been taken when the appointment was made, nothing for the clerk remains to be done except to conduct the lady to the dressing-room and carry a copy of style and size wanted to the operator.

Have Pleasant Manners.

As the subject returns to the reception-room after the exposure has been made, the same pleasant manner should be evident, and here the date for showing proofs may be set. If the day is a very busy one, so much attention may not be paid to each one, but the same gracious manner should always predominate. To the timid, self-conscious customer I would speak in a most kindly manner, endeavoring thereby to aid him in securing that assurance which would help him to decide what he wanted. To the reserved one I would state all necessary facts in regard to pictures and prices in a quiet, dignified way, without too much unnecessary talk. To the proud, haughty, better-than-thou creature I would say in the same way what was said to the reserved one, except that my manner would plainly indicate that I expected no impudence. To the shallow creature, usually termed a "dude," I would present my samples and let him know we had none of the characteristics so evident in his make-up, and to the brisk business man I should endeavor to be brief and to the point, showing him that we, too, were business-like, also.

In the taking of orders no fast-and-hard rule can be laid down, and the same is true of showing proofs. Here it is that tact as well as diplomacy is very necessary. Our success depends much on our experience and our experience more on our knowledge of human nature. We must present our larger work in such an attractive light that we can make the customer feel that that is what he wants. Keep small work, smaller than cabinets, entirely out of sight.

Price pictures singly rather than by the dozen; for instance, you might frighten a man clear out of the studio to say a group picture such as he wants of his family costs nine dollars a dozen, but rather say they are seventy-five cents apiece by the dozen.

Many do not know what good retouching does for a picture, and, unless proofs are slightly retouched before showing, a great help would be to have in the show-case a finished print, before and after retouching, from the most freckled face to be found. This at once modifies the effect of the harshness in the present customer's case. All proofs should be plainly marked as to changes desired, for the benefit of the retoucher. Days upon which large crowds are expected upon the streets of a town or city the reception-room clerk should be unusually prompt and careful in preparation for the day. At all times she must make her employer feel that his financial interests are her interests, and if she wishes to please him especially, let her now and then suggest some good point on advertising; and, in a word, let her be tactful, making herself a necessity to the success of the business, and she need not complain for want of a position or because of poor pay.

PHOTOGRAPHIC PORTRAITURE—A PLEA FOR LONGER EXPOSURES.

BY WALTER SCUTT.

CHARLES KINGSLEY, in *Two Years Ago*, written about fifty year since, when daguerreotypy was in common use, puts the following words into the mouth of one of his characters, Claude Mellot, an artist, who says, with reference to photographic portraiture: "It tries to represent as still what never yet was still for the thousandth part of a second: that is, the human face as seen by a spectator who is perfectly still, which no man ever yet was. My dear fellow, don't you see that what some painters call idealizing a portrait is, if it be wisely done, really painting for you the face which you see and know and love; her ever-shifting features, with expression varying more rapidly than the gleam of the diamond on her finger; features which you, in your turn, are looking at with ever-shifting eyes; while, perhaps, if it is a face which you love and have lingered over, a dozen other expressions equally belonging to it are hanging in your memory, and blending themselves with the actual picture on your retina; till every little angle is somewhat rounded, every little wrinkle is somewhat softened, every little shade somewhat blended with the surrounding light, so that the sum-total of what you see, and are intended by heaven to see, is something far softer, lovelier—younger, perhaps, thank heaven, than it would look if your head was screwed down in a vise, to look with one eye at her head screwed down in a vise also—though even that, thanks to the muscles of the eye, would not produce the required ugliness; and the only possible method of fulfilling the pre-Raphaelite ideal would be to set a petrified Cyclops to paint his petrified brother."

I have never read anything which more clearly sets forth the faults, at the same time pointing a way to the improvement, of the great majority of photographic portraits; and, though written so long ago, the quotation seems so worthy of careful consideration that I am induced to use it as a sort of text for this short article, though nothing I can say will approach Kingsley's words in value.

The "pre-Raphaelite ideal" of carefully representing with irritating sharpness every trifling detail of a subject, whether im-

portant or otherwise, is based upon a misconception, and is contrary to physiological truth. The human eye is normally never still, and can only be kept still by a conscious and painful effort; consequently, when looking at a picture or a scene, there is only one small portion of it sharply focused upon the retina at any particular moment, and the full details can only be observed by allowing the eye to rove restlessly from one point to another, which is in ordinary cases an unconscious action. The result is that only one small portion of the view is sharply defined at the first *coup d'œil*, and this portion of the picture should be the predominant point or principal object.

The same thing is true with regard to a portrait, but in this case an additional factor comes in: not only is the spectator's eye constantly moving, but the features of the sitter are also, under natural conditions, continually varying their expression, with the effect so admirably described by Kingsley.

When these circumstances are fully considered, is it any wonder that the usual photographic portrait appears as though one had "set a petrified Cyclops to paint his petrified brother?" The sitter composes himself into a rigid fixity of expression by repressing the natural variations of the features: the camera Cyclops fixes its vitreous eye with merciless, all-defining stare; the snap-shutter makes its instantaneous wink; the plate records its momentary impression; and the man behind the camera fondly hopes to secure a portrait. How is it possible under these conditions?

It is well to remember what the old masters aimed at in painting a portrait, namely, "to give the sum total of the whole character; traces of every emotion, if it were possible, and glances of every expression which have passed over it since it was born into the world. They are all here, the whole past and future of the man; and every man, as the Mohammedans say, carries his destiny on his forehead."

The best photographic portraits ever produced are, in my opinion, those by David Octavius Hill, R.S.A., (1842–1870), made in the early forties from calotype negatives, with a lens that did not define too sharply, and an exposure of about four *minutes* in bright sunshine.* During an exposure of such length the features must necessarily vary in expression, and the resulting portrait is consequently a combination of *several* expressions instead of a fraction of *one*. In this way Hill produced during two years, 1843 and 1844, a series of portraits which have "a truth, breadth, and power about them which we find in only the highest walks of art, and not often even in them," as Hugh Miller wrote about sixty years ago.

I do not mean to suggest that the high qualities of these portraits are entirely due to a long exposure, for I do not forget what Mr. Corder says of "the magnificent posing, the appearance of natural ease, which characterize most of Hill's work," and, again, "his arrangement of the light and dark patches is also very beautiful, and only those who have essayed photographic portraiture can fully appreciate that the apparently accidental and unintentional distribution of the high lights and shadows has all been carefully and deliberately planned." But I do think that the long exposure is largely responsible for the convincing naturalness of expression so remarkable in many of these portraits; and I therefore suggest to photographers in these days of lightning speed that they should make some experiments in portraiture with exposures of from half to one or even two minutes, using orthochromatic plates and light filters for the double purpose of obtaining a better translation of color into monochrome and of lengthening the exposure. With such exposures, and the sitter at his ease, the features will naturally vary in expression, and, if the photographer, by conversation or otherwise, has managed to put his sitter into the right frame of mind, the result will probably be very different from the soulless image so often passing for a portrait.

These long exposures will also permit the

* "A commission to paint a huge canvas of Doctor Chalmers and his 470 brethren leaving the Church of Scotland at the 'Disruption' in 1843, drove Hill to take up the entirely new art of calotype, so as to get his studies for his crowded picture—probably the first, but certainly not the last time that photography has been called in to help an artist in a tight place."—WALTER S. CORDER.

use of what is often a great help in the attempt to get "every little angle somewhat rounded, every little wrinkle somewhat softened, etc.," namely, a single uncorrected lens. Such a lens used with discretion, and with the necessary allowance when focusing, for the difference between the chemical and visual focus, will give very beautiful results possessing a roundness and softness very much preferable to the "map-of-a-face" effect so often given by the highly corrected lenses of the present day.

Woolliness, fuzziness, and blur to the extent of destroying modelling and structure, one does not for a moment advocate; but it is too often forgotten that the human eye at its best is but an imperfect optical instrument, and that a portrait (or anything else, for that matter) as projected by certain modern lenses is defined in a manner such as no unaided human eye ever saw or will see.

In a portrait, as in any other subject, he who "insists on the needless to the detriment of the essential" will surely produce a result stamped with the cold and dead reality of the photograph, instead of alive with the very spirit of the subject portrayed.—*Amateur Photographer.*

RODINAL WRINKLES.

BY PROFESSOR FLORENCE.

THAT many of the newer alkali developers on the market could be better, also that many are excellent, is not to be doubted. This condition of affairs makes it imperative that the amateur (mostly beginners) must make a number of experiments, and I regret to say the majority of them are indefinite experiments, jumping from one developer to another without becoming thoroughly acquainted with any of them.

Depending upon the advice of your friends is out of the question, as Tom will praise this, Dick will praise another, and Harry will swear by still another. For the benfit of those who do not desire to experiment I will tell you of my experience with rodinal.

Rodinal is an arbitrary word signifying a concentrated solution having paramidophenol as its base.

This solution is ready for use and does not require the addition of any other solution, but since it is highly concentrated, the addition of water is essential. Rodinal will give equally good results with any spring, brook, or tap water from any part of the country.

The power of rodinal as a developer depends entirely upon the dilution. For soft negatives more water should be added, and *vice versa* for contrast. Rodinal is, therefore, a convenient and practical developer, producing negatives clear, clean, and of perfect gradation in the high lights, half-tones, and shadows.

The proper dilution is as follows. For normal exposure:

Rodinal	1 ounce.
Water	30 ounces.

For overexposure:

Rodinal	1 ounce.
Water	20 ounces.

For underexposure:

Rodinal	1 ounce.
Water	40 ounces.

To ascertain the condition of plates with questionable exposure, all that is necessary is to first place the plate in a normal solution and watch the appearance of the image closely. If the image appears immediately it is overexposed. Pour the developer out of the tray and add more rodinal until you have about the proportion of 1 to 20, return to tray and continue developing. Should the plate be very much overexposed and look foggy, add a small quantity of 10 per cent. solution of bromide of potassium. It is wonderful what a small tendency a negative has to fog when developed with rodinal.

Should the image appear very slowly in the normal solution it is underexposed and the developer requires an addition of water.

It is necessary to carry the negative quite far in this developer, more than you would with any other developers. It will then have the proper density after it has been fixed.

Underexposed plates can be built up very strong; leaving them in a very weak developer one hour very well repays the time spent; the result being a brilliant, well-defined negative. It is here interesting to state that Professor Godwin claims that negatives developed with rodinal intensify better than negatives developed with other developers.

As rodinal is especially adapted for clear negatives, full of detail, it makes it adaptable for lantern slides, transparencies, bromide and gaslight papers.

For lantern slides and transparencies use:

Rodinal	1 ounce.
Water (no bromide)	30 ounces.

For gaslight papers use:

Rodinal	1 ounce.
Water	20 to 30 ounces.
Bromide (10 per cent. solution)	40 to 50 drops.

For bromide papers:

Rodinal	1 ounce.
Water	50 to 100 ounces
Bromide (10 per cent. solution)	10 drops.

The whites in the above papers remain absolutely white and show no sign of fog. The tone in the bromide papers varies from blue-black, black, to gray-black, depending on the strength of the developer.

Rodinal will keep for years, but after having been opened will slightly lose its color. This change in color has no effect on its strength, and it can be used with impunity for negatives, though I advise making a fresh solution to obtain the best results with papar. Rodinal will not injure nor stain the fingers.

THE PERMANENCY OF THE PHOTOGRAPH.

BY A. J. JARMAN.

WHATEVER may be said about the lasting qualities of the albumen print, its tendency to turn yellow, and sometimes to fade, one important point in its favor can be stated with all truthfulness. The albumen print is the only photographic print that has withstood the test of a lifetime in photography. There are many albumen prints existing to-day that were made thirty-five years ago which are still in an excellent state of preservation. If these prints are compared with steel engravings made at the same time, it will be found that the paper basis has changed in color to a greater extent than is the case with these well-made albumen prints.

Of all the colloid bodies, albumen stands pre-eminent in forming a stable organic compound with the salts of silver, which in turn is capable of uniting with gold and platinum to form a very stable photographic image. Where permanency is desired the prints should be made upon albumenized paper, sensitized upon a plain solution of nitrate of silver, printed from a negative possessing body, with a little snap, so as to allow a good effective deposit to be formed by the continued action of light within the albumen film; toned in a simple gold toning bath, fixed well, washed well, and mounted upon a pure cardboard mount with a freshly made starch paste. Prints so made should withstand atmospheric changes, fumes and impurities far better than many of the modern kinds of photographic papers. If thirty-five years constitute a test for permanency, they can be relied upon as permanent photographs.

Another point in favor of albumenized paper is that every quality possessed in the negative will be rendered in the print. In this respect the silver print is equalled only by the carbon or pigment print. A common cardboard mount that contains hyposulphite of soda will affect the color and permanency of any print, no matter what it may be; even the carbon print is affected by the chemicals contained in common cardboard.

The carbon print is regarded as one of the most permanent of all prints produced by the agency of light. This is undoubtedly true, providing the process is carried out with scrupulous care. If it is not, the

carbon print will change, although it does not fade in the usual sense of the term. The whites will and do become a very sickly yellow, the cause of this being careless manipulation. This defect can be remedied in the following manner: When a carbon print has been developed upon its support it should be allowed to remain in the alum bath for only a few minutes, washed, and dried, and the transfer made as usual, say, in this case upon a paper support. When the print is ready to mount, trim it to the required size, and plunge it into a 3 or 4 per cent. alum solution (potash alum.) Allow it to remain in this alum bath for five or ten minutes, so that the last trace of bichromate of potash is removed from the film, and wash well in several changes of water. This plan is far better than by means of a hose attached to the faucet. Blot off the superfluous moisture, paste up, and mount as usual.

Carbon prints produced in this way will not change color in the whites. The change of color which so many have taken to be fading is entirely due to the trace of bichromate of potash left in the film, *i. e.*, not washed out in the process of development, nor dislodged at the time when the print is placed in the first alum bath. Carbon prints of all kinds are greatly improved by treating with a second alum bath, whether on porcelain, celluoid or paper, the trouble involved being small, and the results at all times satisfactory. The production of good carbon prints requires both skill and judgment. These can only be acquired by considerable practice and strict attention to every detail. Any attempt to hasten the work by shortening the time in the various details will assuredly produce prints that will change and produce the effects of fading.

Next to carbon stands the platinotype, which was also invented for the production of permanent pictures by the agency of light. Many years have passed since this process first came into use. The original process actually contained nitrate of silver, and the prints had to be fixed in hypo. This, however, was soon improved upon, when a hot solution of potassium oxalate became the developer, and the fixing or clearing bath consisted of oxalic acid, now displaced by the use of hydrochloric acid. The writer has in his possession some unmounted prints made in 1878 and developed by the hot-water process. All of these prints have changed in the whites to a decided brown. The more modern cold development platinotype process is invariably used to-day, and although a print in platinum is, no doubt, permanent as far as the material forming the image goes, yet the whites in many of these prints become a pale yellow or degraded in a comparatively short time. An inspection of photographers' showcases will reveal this as well as the prints that never reach the showcase, both mounted and unmounted.

What is the cause of this? Time and again it is due to defective manipulation. It will be observed that the best platinotype prints, those that retain the purity of the whites the longest, are those produced upon thin paper. The reason is that the hydrochloric acid which is employed as a fixing or clearing agent is better able to penetrate the thin paper within a reasonable time, and thus to effectually dissolve the iron salts contained in the platinum sensitizer. In the production of platinum prints it should be borne in mind that the thicker the paper the longer the print should remain in the acid-clearing bath. A fourth acid bath may be used with advantage when we have to clear a large number of prints.

On one occasion a test was made by leaving a batch of prints upon heavy paper in the fourth clearing acid bath all night. The result was that every trace of the iron salt was dissolved. They were then washed and dried. The whites of these prints were perfect; not one of them was known to change color. This trial gives convincing proof that platinum prints upon thick paper must not be rushed; if they are, fadable prints will result.

Platinotype prints are also affected by a mountant that turns sour. Acetous fermentation sets in; the minute trace of iron salt remaining in the print is converted into one of the lower oxides of iron by the acid in the paste, the result being that not only do the whites of the print become yellow, but in a short time change to a brownish tint. A good mountant is as necessary for a platinum print as it is for

a picture in any of the silver compounds. Some photographers employ the common muriatic (hydrochloric) acid. This is fatal to the production of perfect platinum prints. The impurities contained therein, such as iron, arsenic, sulphur and others, will at once injure the print; this will soon become manifest upon exposure to light.

The production of photographs upon gelatine emulsion papers of late years has almost entirely displaced the older printing-out papers. The permanency of these prints is a matter which is problematical. Remarkable as it may appear, the majority of leading photographers do not employ this paper for general work, platinum, albumen, and carbon being generally used. For commercial purposes, where rapidity of production is essential and for the use of the amateur, gelatine printing-out paper meets the general requirements.

The large majority of prints upon gelatine printing-out paper rapidly show signs of fading, although some gelatine prints retain their original color and freshness for years. Many gelatine bromide prints have shown only slight traces of fading, especially those developed with ferrous oxalate and printed upon porcelain. Some of these prints, although twenty years old, are just as good to-day as when they were first made, which would seem to prove that the permanency of the gelatine bromide print depends very much upon the support of the emulsion.

Prints made upon paper coated with collodion emulsion have also shown considerable signs of fading when the operations of fixing and washing have not been thoroughly attended to, and also when the mountant has become in the least decomposed. Toning in platinum does not seem to ensure that the paper will resist this action. In all the emulsion coated papers, which contain the citrates or citro-tartrates of silver, the tendency to fade has always shown itself. Even in 1864, when G. Wharton Simpson first invented the collodio chloride printing-out emulsion, this fading of the image was quickly observed. Those emulsions which consist mainly of a pure chloride of silver give the best results as far as a nonfadable image is concerned.

The quality of the negative has also a great deal to do with the production of a permanent print. The negative should be of that quality which requires some time to print the shadows well in. It is important, in other words, to get a good reduction of silver to form the image. Unless this is acquired there is no appreciable quantity of material forming the image. When platinum toning is resorted to the printing must be very deep. Why? Because silver is known in chemistry as a monavelent element and platinum as titravelent, which means that one atom of platinum can displace four atoms of silver. Hence, the platinum toning process is not one of so-called plating, but one of chemical substitution.

The fading of these compound-toned prints, which are toned in gold, then in platinum, is due to several causes. First, owing to the negative being too thin to admit of a thoroughly deposited silver image by the action of light; second, to imperfect fixing and washing; third, to a mountant which easily decomposes. The trace of the silver image remaining in such prints is attacked by the imperfectly washed-out hypo. These manipulations should be carried out in a thoroughly reliable manner in the printer's department. It is well-known that prints at times are simply rushed through two or three washings so as to get through on time. The paper or the chemicals are then blamed.

That a platinum-toned print is not a platinum print can readily be tested. Take a well-made platinum-toned print and a print in platinum. Place in a glass tumbler about four or five ounces of nitric acid. Take the prints in each hand and dip them into the acid at the same time. Count five seconds, remove them quickly and plunge into clean, cold water. Wash well, then blot and dry. It will be seen that the toned print has lost considerably by the test, while the platinum print is not affected.

The collodion emulsion print should prove to be one of great permanency if the operations of toning, fixing, and washing are properly carried out. If there is any doubt about the mountant, it is advisable to make a change, employing one containing an antiseptic.

THE PICTORIAL EXHIBIT AT THE NATIONAL CONVENTION.

Two special features distinguished the pictorial exhibit at Indianapolis from preceding convention exhibitions—its remarkable scope and its admirable arrangement. Apart from the usual representative display of American professional work, it included several State and Interstate collections of excellent quality, a choice exhibit of portraiture by prominent foreign photographers, and a special display of prints loaned by The Photo-Secession of New York. Thus under one roof was made an exceedingly interesting exhibition of the best work of to-day by famous professionals and amateurs of this country and Europe. The educational value of such an exhibition must be immediate and far-reaching in its effects. The influence of the foreign and Photo-Secession exhibits in particular is bound to be felt in future professional work. For the securing of this remarkable exhibition Messrs. C. R. Reeves, George G. Holloway, and, we believe, Mr. Chas. W. Hearn were responsible and deserve the praise of the fraternity.

The arrangement of this large and varied display was well managed. Instead of being hung together in one large room, the exhibits were grouped in several connecting rooms of different size. Thus they were altogether convenient for viewing, and one's attention was not distracted by the sight of many exhibits all demanding interest and examination.

By an unfortunate happening, our survey of the pictures was delayed until Friday, when some had already been removed from the walls. Our brief notes, however, cover all the most important exhibits and, as before, the comments are largely those of prominent photographers whose names are of necessity withheld from publication. We believe that these comments, coming, as they do, from men who are familiar with the work involved in preparing an exhibit for the Convention and with the personality of each exhibitor, will prove more useful and more interesting than any comments we ourselves could offer from our necessarily hurried survey.

The Photo-Secession.

The loan exhibit from this recently organized society of picture makers, sent by Mr. Alfred Stieglitz, comprised a large number of prints by workers of the "New School," and was the centre of much attention among the professionals present, to many of whom the work was a revelation. As a matter of course, the individual prints were looked upon with favor or disfavor, according to the preferences of the photographer who examined them. The adherents of "good, straightforward photography," with its clearly-cut definition, technical quality, and chemical effects were unable to accept the pictorial treatment displayed in a few extreme examples, such as the work of Edward Steichen, of New York; but the enthusiastic praise of a few discerning critics caused many photographers to think, and before the exhibition was closed the Secession display received a considerable amount of earnest study from those who saw in it, though dimly, new possibilities and a new hope. The quality of the prints excited universal admiration, and the varied methods of treatment adopted for securing special effects were full of suggestion. Those who could not see this exhibit at the Convention can obtain a clear idea of its character and of the movement in the pictorial photography of which the Secession is the exponent, from the quarterly "Camera Work" mentioned on page 335 of our July issue.

The Foreign Exhibit.

The pictures sent by European photographers were a surprise to all who saw them. We have gradually accustomed ourselves to the belief that American portraiture is very decidedly superior to that produced abroad. As far as the general average of work is concerned this belief is well founded, but in the best class of portraiture Europe has workers equal to the best on this side in skill and accomplishment. The exhibit at the Convention comprised examples of work carefully selected from this point of view, and proved most profitable and interesting.

Boissonnas, of Geneva, sent two portraits of splendid quality, one of which, a portrait of an old Professor, was shown at the New England salon of 1902.

Langfier, of London, sent a small col-

lection of carbon portraits in red chalk, sepia, and sea-green. Some of the prints were of large size and especially notable for atmospheric quality and general composition. A three-quarter figure portrait of a man was unusually good.

Mindow and Grove, London, exhibited half a dozen platinotypes, among them attractive portraits of Miss Ellen Terry and other celebrities, a branch of work for which this firm is famous. A group entitled "Paola and Francesca" in this collection was generally spoken of as the best example of its class in the whole display. The print was combined from three negatives and exhibited remarkable skill in manipulation.

H. Walter Barnett, London, sent five superb portraits in carbon, the prints being mounted on vellum. Mr. Barnett is an Australian photographer who has made his reputation in London within the past ten years. His work combines the peculiar manipulative skill of Histed with the "likeness quality" seen in Hollinger's work.

Turner and Drinkwater, of Hull, England, contributed six portraits in sepia platinum on vellum. The subjects included H. R. H., the Princess of Wales, Mrs. Brown Potter, etc., and the clever handling of the draperies elicited keen admiration.

Fellows Willson, London, sent four sepia platinum prints of great attractiveness, extremely light and dainty in their effects.

Two 14 x 17 heads, by Frederick Hollyer, London, were the centre of interest to those who are familiar with Hollyer's past work. They were virile in quality, finely modelled, and well spaced.

T. Lee Syms, Tyldsley Lane, England, sent four "art studies" which were most suggestively attractive. These were modern in general character, each print being specially mounted. In composition and action they were remarkably effective.

An unsigned exhibit consisting of three bust portraits, showing as many views of the same subject, also attracted much comment by its fine quality. The three prints were finished in red chalk and mounted on one card, an harmonious effect being secured by water colors blending together in agreeable tints.

Furley Lewis, London, sent three platinum prints: one a picture of a child full of life and laughter, another a portrait of a fencer, and the third an excellent portrait of Mr. H. Snowden Ward, of *The Photogram*. The English collection was secured by Mr. Ward's help, and. this fact gave interest to his portrait, apart from its own excellence as a clever bit of work.

Richard Speaight, London, who has the distinction of being photographer to the children of British royalty, sent six pictures of children, two of which were group portraits. It is impossible to convey by mere description an adequate idea of the beauty and pictorial attractiveness of this little collection, which revealed the wonderful possibilities of photography in this special field.

Belgium was represented by the single exhibit sent by Joseph Fallon, of Namur, consisting of two enlargements and a marine piece, this latter being chiefly remarkable for its atmospheric effects.

Mexico sent two exhibits: one by Mrs. C. H. de Gonzales, of Sonora, showing a happy appreciation of the subject and sympathetic handling, together with much skill in manipulation; the other comprised thirteen prints by F. M. Steadman, of Puebla, showing portraits of well-known residents of Yucatan. Mr. Steadman's work attracted special attention because of his paper on "Home Portraiture" given in the proceedings of the Convention, and it was conceded that his prints demonstrated the practical value of his methods as explained in his paper.

The mounting and finishing of the foreign exhibits received much attention, as, in most cases, individually considered to carry out the intention or motif of the subject enclosed within the frame or mount. Platinum in various tints, carbons in selected colorings, and the use of vellum as the support were characteristic features of the display. It is regretable that we cannot have some arrangement by which the best European work could be shown at all our conventions as a source of inspiration and suggestion.

P. A. of A. Members' Display.

This large collection, representing the latest work of the members of the Na-

tional Association, was, as usual, the most important section of the general display. On the whole it presented an impressively satisfactory appearance, showing steady advance in the better appreciation of the requirements of photographic portraiture. Freak notions are being abandoned, and good pictorial portraiture is apparently the standard aimed at by the majority. There were, of course, many failures and examples of what *not* to do; many examples also of the overambitious attempt to get effects. Speaking generally, however, the National display indicated that definite progress is being made, which is the most desirable sign of greater things to come.

Our comments upon the large number of exhibits must necessarily be brief and, perhaps, somewhat pointed.

Prominent among the large prints in this section were seventeen sepia carbon portraits on etching paper, by F. G. Schumacher, Los Angeles. The full-length portrait of a lady in this exhibit showed admirable skill in the management of the hands, and a portrait of the Mayor of San Francisco was much admired for its richness of effect.

Stephenson, of Atlanta, also sent an exhibit of ten carbon prints on toned etching paper in which clever handling and technique were apparent. This worker makes remarkable progress in his portraiture.

Giffin, Wheeling, W. Va., was represented by sixteen prints comprising considerable variety in subjects and treatment and careful thought. The exhibit suffered from the style of framing adopted, and a smaller number of prints (selected from this exhibit) would have shown the photographer's capabilities to better advantage.

Brenner, Cincinnati, had an attractive collection of small portraits evincing much delicacy and refinement. A group picture in this exhibit was generally spoken of as one of the best things of its class at the Convention.

Rösch, St. Louis, showed three carefully finished platinotype portraits exhibiting his usual skill in composition and general handling.

Snow, Mankato, Minn., sent five platinotypes; of these a portrait group of two children was charmingly managed.

Cole and Holladay, Durham, N. C., showed seven carbons on etching paper, among them an excellent portrait of a Bishop. This exhibit was requested for the New England salon, and will later go to Minneapolis, which indicates the favor with which it was regarded.

The Albany Art Union, Albany, N. Y., contributed ten platinum prints of a variety of subjects, by Mr. Rogers, a young photographer whose work shows marked advance year by year.

The Baker Art Gallery, Columbus, O., exhibited three carbon prints of large size, somewhat excessively retouched and finished with too much smoothness.

Stein, Milwaukee, was represented by a splendid display of portraiture, notable for its wonderful technical quality, and very attractive from the pictorial view point. Mr. Stein has produced much remarkably good work of late years, which doubtless has direct relation to his equally remarkable prosperity. The exhibit comprised eighteen prints.

Eickemeyer, Jr., New York, sent an exhibit of eighteen carbon prints, portraiture and *genre*, showing his skill in composition and technique. We know of few photographers whose work reaches so high a standard of average quality.

Jackson, Tacoma, sent four carbons showing decided advance on his last year's work. The portrait of a boy in this exhibit could have been trimmed to advantage.

Moses and Son, New Orleans, showed twelve platinotypes, chiefly portraits of children, full of life, dainty in general effect, and displaying much skill in the securing of desirable lines.

Kellmer, Hazleton, Pa., sent five platinotypes which offered convincing proof that he sustains his reputation as a leader in his State.

Webster, Des Moines, Ia., exhibited an interesting collection of everyday work containing a few portraits of unusual quality. A year's earnest study of pictorial principles would help this worker immensely.

Dozer, Bucyrus, O., sent sixteen platinotypes of various subjects exhibiting substantial growth in technique and composition.

W. F. Core, Cincinnati, continues to give his most careful thought to the children, following his brother, Mr. E. B. Core, of New York, in this devotion. His display of sixteen prints included several charming bits of child portraiture.

Thuss, Louisville, sent five collodio-carbon prints; good straightforward work calculated to please his patrons.

Chambers, Montgomery, Ala., was represented by seven platinum prints, four of which were figure portraits of women. The portrait of a venerable negro in this exhibit was very favorably received and added to its maker's reputation in the profession.

Miss Mary Carnall, Philadelphia, exhibited eleven platinotyes, chiefly portraits of children, in which specialty this worker excels. The subjects were well handled and showed careful thought in composition and arrangement.

Sperry, Toledo, sent a large exhibit of twenty-one pictures of children showing remarkable evenness in quality and a keen sympathy with his little subjects. This display contained the best showing we have seen from Mr. Sperry.

Brush, Minneapolis, sent a very satisfactory exhibit of sixteen platinum prints; clean, straightforward portraiture without "frills" and attractive by its technical quality.

Spellman, Detroit, was represented by twelve portraits notable for their softness and subtle tone qualities. The ivory tint which lent attractiveness to these prints made them pleasant to the eye, and this effect will doubtless be widely copied during the year.

E. B. Core, New York, sent a small collection of children's portrajts in platinum, very even in quality and revealing all the naturalness and life of the subjects. Mr. Core is a past-master in this art, and his work is a delight to eye and imagination alike.

Field, Berlin, Wis., one of the few professionals who make a hobby of landscape, pursues his hobby with increasing success. His Convention exhibit of twenty prints exhibited remarkable delicacy of feeling and a true appreciation of "the spirit of place" without which nature tells no secrets and reveals no beauty.

Knaffl Bros., Knoxville, Tenn., again scored success with a figure study entitled "The Two Profits," which Professor Hitchcock pronounced one of the best things at the Convention.

Goldensky, Philadelphia, putting aside the temptation to compel attention by a large exhibit, sent three carefully selected portraits which won much favorable comment. The rich effect of a print in platinum tissue was generally admired, and the exhibit showed steady advance by its skilful renderings of admittedly difficult subjects.

Barrows, Boston, showed six platinum prints. One of these, a large-size female head crowned with leaves was especially notable for its pictorial beauty.

The Schriever exhibit (Scranton, Pa.) was removed from its place when we made our survey, but we heard many speak of its outstanding technical effects.

NEWS AND NOTES.

R. P. S. EXHIBITION. In commemoration of the jubilee of the Royal Photographic Society of Great Britain, the Forty-eighth Annual Exhibition, to be held at the New Gallery, 121 Regent Street, London, W., from Thursday, September 24th, to Saturday, October 31st, 1903, will be divided into the following five sections:

1. A loan collection of pictorial photographs illustrating the progress and the present position of photography as an art.

2. A loan collection of scientific and technical photographs illustrating the progress and the present position of photography as a science.

3. Pictorial photographs selected in accordance with the established regulations that follow.

4. General professional work.

5. Photographic apparatus and materials.

The judges in section 3, *selected pictoral photographs*, are as follows: William

Crooke, Dr. P. H. Emerson, J. C. S. Mummery, G. A. Storey, A. R. A., and J. B. B. Wellington. The selecting and hanging committee consists of the judges and H. Walter Barnett, J. H. Gash, John H. Gear, M. Jacolette, Furley Lewis, Jas. A. Sinclair, B. G. Wilkinson.

SEED PLATES IN GREAT BRITAIN. The invasion of Great Britain and its colonies by American manufacturers has begun in earnest with the introduction of the Seed plate and other peculiarly American specialties. Concerning the Seed plate a prominent English dealer, Mr. E. K. Hurman, says:

Photography still advances; in film photography we now have spools the film on which is non-curling (the new kodak film) this is a distinct gain, and will reconcile many to the work of developing and printing these spool films; then in the plate way we now have certainly the finest plate ever produced, viz., the "Seed" plate. The great secret of their success lies in the assiduous effort of the manufacturers to be at the "top of the scale" with their goods, resulting in absolute uniformity, ample speed, and fineness of grain. Very special care is taken in the selection of glass to be coated. I fully expect before the summer is over (that is if it comes in all seriousness) the "Seed" plate will be the most popular plate in Britain.

EDITOR'S TABLE.

SPORTSMAN-PHOTOGRAPHER.—A recent letter from our old friend, Mr. S. H. PARSONS, of St. Johns, Newfoundland, tells us of his sorrow in the death of Mr. EDWARD L. WILSON, and speaks feelingly of the great pleasure and practical help received during a long friendship between the two veterans. The practical fruits of this friendship, in the shape of magnificent views of Newfoundland and its attractions, have been shared with our readers in the pages of this magazine in the past years.

With his letter Mr. PARSONS sends a news clipping, telling of a canoe expedition on the Upper Humber, amid beautiful scenery, with excellent salmon and grilse fishing. The party thoroughly enjoyed their sport, and were blessed with big success in the way of fish and photographs Between pictures Mr. PARSONS secured seventeen to twenty-one salmon. Unfortunately, on the trip home, the canoe was upset in one of the rapids, and, although the fish were secured, the plates with their exposures did not survive the mishap.

The letter also informs us that Mr. WILL PARSONS, who received his photographic training with his father, Mr. S. H. PARSONS, and who spent some months in the United States a few years ago, has established a good business at Croyden, Surrey, England. This will doubtless interest those who met Mr. PARSONS when he was here.

THE JEX BARDWELL FUND.—JEX BARDWELL died last December, and has probably been forgotten by the majority of our readers. In our brief notice of his death in the January number of this magazine we mentioned the Jex Bardwell Fund, inaugurated at one of the national conventions with the intention of providing a home for Mr. and Mrs. BARDWELL in their old age. This intention was realized in a somewhat different way to that in which it was proposed. A portion of the fund was expended in the payment of rent, and with the balance a home was bought for Mr. and Mrs. BARDWELL, consisting of a burial plot in a Detroit cemetery. A few days ago we received from W. H. ALLEN, of Detroit, now retired from business, a statement of the final disposition of this Jex Bardwell Fund, which we publish here for the information of all concerned:

JEX BARDWELL FUND.

1897.	August 4th.	Cash received . .	$159 18
	August 11th.	" " . .	10 00
	October 11th.	" " . .	16 00
	October 14th.	" " . .	10 00
	November 15th.	" " . .	13 00
	December 8th.	" " . .	17 50
1898.	March 2d.	" " . .	38 50
1900.	December 27th.	Cash, G Cramer .	50 00
		Interest	4 90
		Total	$319 08

Disbursements.

Rent	$256 58	
Cemetery lot	60 00	
Printing circulars	2 50	$319 08

WM. H. ALLEN,
Treasurer.

G. CRAMER,
GEO. STECKEL,
O. C. ALLEN,
E. L. WILSON,
E. EDWARD ROSCH,
C. M. HAYES,
WM. H. ALLEN,
Committee.

THE Photographic Association of the Pacific Northwest, embracing the photographers of Oregon, Washington, Idaho, Montana, and British Columbia, met in convention at Salem, Ore., September 23d, 24th, 25th, and 26th. President CHARLES BUTTERWORTH, of Portland, Ore., led the meetings this year, and was ably supported by an excellent board of officers. An attractive programme had been prepared, and our friends in the Northwest report an enjoyable and profitable holiday.

A VERY attractive studio folder comes to our table from the Bass Studio, Paterson, N. J. It is entitled *A Few Words Concerning a New Studio*, and consists of an interesting account of the Bass Studio and its facilities, together with an interior view of the reception-room and a platinum portrait of the proprietor, neatly enclosed in a sage-green cover paper. The booklet is well designed to attract business, and we congratulate our subscriber upon his enterprise in getting out so dainty an announcement.

WE are in receipt of a new *Cooke Booklet*, explaining just how Cooke Lenses differ from other lenses, the explanation being accompanied by an interesting selection of illustrations representing different branches of work. The *Cooke Booklet* is a model of its kind, written in plain and simple language, direct in its style, and attractively made up. As a summary of the advantages claimed for Cooke Lenses, it should be carefully read by the progressive photographer. Copies may be obtained on application to TAYLOR, TAYLOR & HOBSON, LTD., St. James Bldg., New York.

ALBALINE.—In reply to several correspondents as to where Albaline and "Thinner" can be obtained, we are informed that these can be purchased from the EGYPTIAN LACQUER CO., 152 Front St., New York, or 23 South Canal St., Chicago, Ill. These specialties were referred to by Mr. A. J. JARMAN, in his papers on "Watch Dial Photography," which have attracted much attention among professional photographers.

WE recently had the pleasure of a chat with an Australian photographer, Mr. FRED RADFORD, of Melbourne, who is at present visiting this country. Mr. RADFORD has worked out a method of diffusion of focus, and applies it in portraiture and landscape with remarkable effect, separating the various planes of his subjects and obtaining thereby an almost stereoscopic relief and very pleasing pictorial effects. Viewed at close range, his prints seem to be wofully out of focus, but when looked at from a reasonable distance of say twenty to thirty-five inches, the subjects stand out with remarkahle solidity, and the tone values given by the proper separation of the planes are perfectly in evidence. On other pages we give a few examples of Mr. RADFORD'S "Tone Value Photography," and feel sure that our readers will be interested in seeing them.

Mr. RADFORD has spent twenty years in professional photography in Melbourne and Sydney, and for some little time was a co-worker with Mr. ARTHUR BARNETT, who to-day is perhaps the most prominent portraitist of Great Britain. Mr. RADFORD obtained his art knowledge by years of study under Professor FOLINGSBY at the Technical College at Melbourne. He gave up his practice in Melbourne some six months ago to take a two-years' trip of observation round the world. It is his intention to stay in the United States perhaps a year, proceeding thence to England, and returning to Australia early in 1905. Among his other accomplishments, Mr. RADFORD is a skilful worker in black and white, the finishing of enlarged work of all kinds, etc. We hear that he has already undertaken commissions in this line for prominent New York photographers with much success.

FOURTH ANNUAL SALON, CHICAGO —The indications are that the Fourth Annual Salon of the Chicago Society of Amateur Photographers, to be held at the Art Institute, Chicago, from December 29, 1903, to January 24, 1904, inclusive, will be a great success.

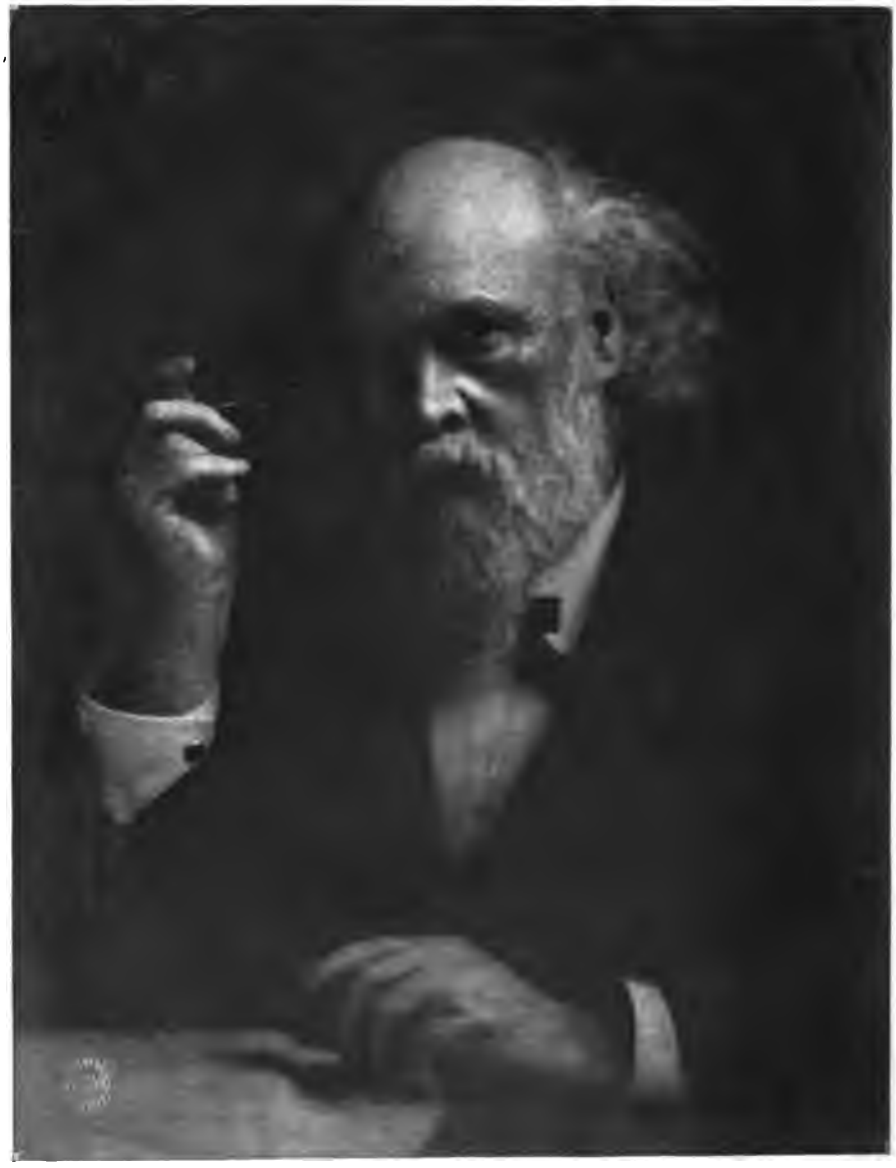
The officers and committee having charge of the Salon have reason to believe that a larger number of pictures will be hung than at any other previous Salon, and that the grade of work will be higher than heretofore exhibited; this is saying a great deal, because all of the Chicago Salons have been a decided success each year, showing an improvement in both the number and quality of pictures hung.

The high class of work displayed at the last Salon was thoroughly appreciated by the public, who daily visited the Art Institute in large numbers to inspect the pictures.

A departure was made this year in the selection of a jury in that it is wholly photographic, the names of the members of the jury of selection being a sufficient guarantee that the pictures submitted to its consideration will receive the most careful, painstaking, and intelligent attention, and also an assurance that the standard of work required in order that the pictures submitted may enter the "select class" will not be below last year.

The loan collection of pictures of the Photo-Secession will be hung in the Salon, and it is being awaited with considerable interest.

THE BAUSCH & LOMB OPTICAL CO., of Rochester, will accept our regret at our inability to be with them on the semicentennial anniversary of their association in business, which was celebrated at Lyceum Theatre, Rochester, N. Y., a few weeks ago. The BAUSCH & LOMB OPTICAL CO. have made a world-wide reputation as American lens makers, and we are sure that our readers will join with us in wishing them another half-century in their noble enterprise.



GEORGE W. MELVILLE, ENGINEER-IN-CHIEF, U. S. N. (retired)

By Elias Goldensky, Philadelphia

WILSON'S PHOTOGRAPHIC MAGAZINE.

FOUNDED BY EDWARD L. WILSON.
L. W. WILSON, EDITOR.

VOL. XL. OCTOBER, 1903. No. 562.

THE DAGUERREOTYPE PROCESS IN PRACTICE.

BY A. J. JARMAN.

At the present day the question is often asked: Is it possible to produce Daguerreotypes in the modern studio? Yes, it is possible to produce these beautiful transcripts of nature in the modern studio. Two rooms must be set for carrying out the process.

The highly polished surface of silver is easily contaminated and injured by fumes and by contact with the fingers. The fumes of sulphur in the atmosphere will affect the silvered plate to a very injurious extent. It will, therefore, be necessary to handle these plates with far more care than the modern dry plate. The Daguerreotype process is in every way a dry-plate process, the chemicals required being entirely different to those employed in modern photography. If care is exercised in the different operations there will be no great difficulty experienced in producing the most beautiful pictures ever made by the agency of light.

As a high degree of sensitiveness can be attained upon the polished silver plates, views may be taken instantaneously and portraits produced by a few seconds' exposure. The Daguerreotype process is without doubt the only process in photography where the natural colors have occasionally been secured and fixed, although not so decided as in nature. The tints of green, red, and other colors have been secured.

It will be necessary to point out here that the sensitive surface of the Daguerreotype plate differs entirely from any other sensitive surface because it is produced by the direct action of the elements iodine, bromine and chlorine, without any process of chemical substitution, the elements in this case being in a nascent condition. In the handling of iodine and bromine considerable care must be exercised, as the vapor of either of these elements will cause severe smarting in the eyes. Although this smarting is not of long duration, it is advisable to avoid using these substances in close proximity to the face.

In the first place it will be necessary to procure some well-silvered copper plate, or to provide a number of well-planished copper plates of the size required. If it is desired to purchase copper plate already silvered on one side, the best obtainable is known as reflector plate. It is advisable, however, to obtain the planished copper plates and have one side coated with a good coating of silver at an electroplater's and have them buffed and polished. Each plate must be kept wrapped in tissue paper so as to prevent rubbing and scratching.

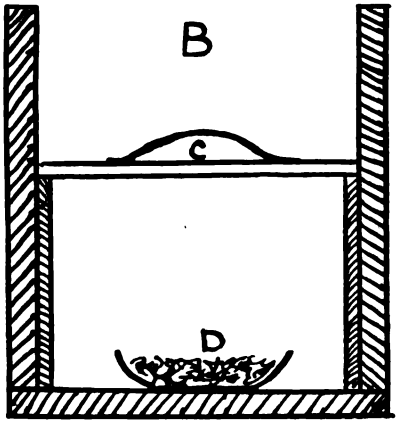
The following chemicals and materials will be required:

Two ounces of pure iodine.
One pound of pure mercury (quicksilver).
Two ounces of bromine.
Two eight-ounce glass funnels.
Half a pound of tripoli.
Half a pound of nitric acid (C. P.).
Several clean eight-ounce glass bottles, with a stock of clean corks.
Half a pound of bromide of lime.
Two spirit lamps (to be used with alcohol only).
Two fifteen-grain tubes of chloride of gold.
Some hyposulphite of soda.
One pound of absorbent cotton.

And one or two buff sticks, made by gluing a strip of buff leather upon a piece of

wood two inches wide and about fifteen inches long. The face of this buff stick

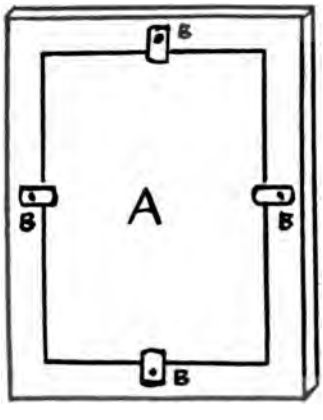
FIG. 1.



Sensitizing box.

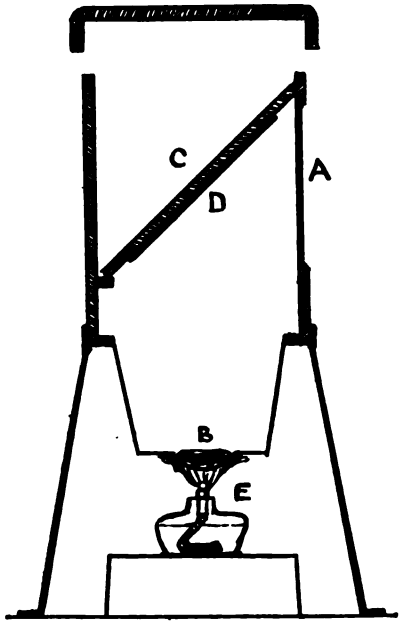
should be curved, because a curved buff stick will polish a level surface better than

FIG. 2.



a flat one, which has the wood shaped at one end so as to form a handle. It is better still, however, to employ a buff wheel made of swansdown calico with a leather centre, fitted on the end of the spindle of an electric motor so as to revolve at a very high speed. If it is not possible to employ an electric motor, resort can be taken to a small polishing lathe. Anything required in this line may be obtained at any electroplate supply store. The buff wheel will perform the work of polishing a plate more quickly and better than can be done with the buff stick. About half a pound of the finest rouge may also be added to the stock of material.

FIG. 3.



Developing box.

The following apparatus will also be required: Two sensitizing boxes like Fig. 1. Two frames as shown in Fig. 2, consisting only of a piece of well-seasoned board to hold the silvered plate, with four small copper fasteners attached, so fitted that they will turn easily. One developing box, Fig. 3. The sensitizing boxes are made of wood with a close-fitting cover, shown at A, Fig. 1. B shows the box in section; C is a cover, also made of wood, to keep in the fumes of the chemicals contained in the saucer at D. C is only removed when it is necessary to replenish

the chemicals, or to insert the frame, Fig. 2, when it is required to sensitize the plate. The developing box shown in section in Fig. 3 is also made of wood except the bottom, which is made of plain sheet-iron, with a concave depression at the base, to hold a small quantity of mercury. The box is supported by four flat strips of iron screwed to a board, upon which stands a block of wood and an alcohol lamp. It is necessary to have a thermometer placed in the mercury here, so that the temperature may be seen at any moment. It must not be allowed to rise higher than 160° F., the lamp being withdrawn as soon as 140° F., is indicated, when an image is being developed. Both the interiors and exteriors of all these boxes may be varnished with shellac varnish. The board at Fig. 2 should also be varnished, but the iron of Fig. 3 must be left untouched. A well-fitted lid attached to the body of the box by hinges must be provided for Fig. 3. The lids of the sensitizing boxes must also be hinged.

At A, Fig. 3, is fitted a piece of glass, thus forming a window which enables the operator to examine the plate during development.

The following solution must be made up and kept ready for use:

Chloride of Gold	8 grains.
Distilled Water	16 ounces.
Hyposulphite of Soda . .	32 grains.
Distilled Water	4 ounces.

When the chloride of gold is dissolved, pour the solution into the hyposulphite of soda, slowly, stirring well at the same time with a glass rod. The liquid will appear a little yellow in color, but this will soon disappear. It must now be filtered and kept ready for use in an amber-colored bottle. A bottle of dilute nitric acid must also be kept at hand, one part acid to twenty of water. In working the Daguerreotype process a good stock of distilled water will be required, as all the solutions must be made with distilled water. The washing of the plates must also be performed with distilled water, for should there be any impurity at all in the water, streaks and teardrops will become visible, owing to the deposit remaining upon the plate at the time of the evaporation of the water.

The strength of the hyposulphite of soda solution for fixing the image after development should be one ounce of hyposulphite of soda to eighteen ounces of water. If a stronger solution is used, it may fix more quickly, but the high lights are likely to be eaten away. The strength above mentioned is about right for this kind of work.

With all the preceding material at hand, the next thing to be done is to set two rooms apart for the work. In one the polishing only must be carried on under a good light, so that the surface of the plate can be closely and thoroughly inspected.

The second room is to be used for sensitizing the plates and developing. We assume here that the polishing is done with a rotary buff, or rag wheel, as it is called by electroplaters, and as there is both dust and fluff in the air of the polishing room, it will be easily seen why this should be kept apart from any other workroom. More trouble is likely to be caused from dust than from any other source in the production of the Daguerreotype.

In preparing the plate to receive the image in the camera, it is most advisable to use chlor-iodide of lime and bromide of lime, both of which can be procured from a manufacturing chemist. The chlor-iodide of lime is of a deep brown color, while the bromide of lime is a very bright scarlet. Although solutions of iodine and bromine may be used, the above mentioned chemicals are by far the best, as there is no moisture contained in them to cause condensation upon the plate, particularly in hot weather.

Having all the apparatus at hand, one of the sensitizing boxes must be charged with the chlor-iodide of lime, by placing a small quantity in the saucer shown at D, Fig. 1. In the second box place a small quantity of bromide of lime, replacing the cover at C to keep in the active gases. Now take one of the highly polished plates in a saucer, moisten a small quantity of tripoli with the dilute solution of nitric acid already described. Moisten a piece of absorbent cotton with pure alcohol, and rub over the polished surface of the plate quickly so as to take off any trace of grease. Now apply the moistened tripoli

in the same way, rubbing the plate endwise and crosswise.

Apply a small quantity of dry tripoli to the buff wheel by placing some of it upon a piece of paper held in the palm of the hand, so that by treading the driving wheel and causing the buff to rotate, it will take up some of the tripoli. The plate now being dry, let the buff wheel spin at its highest speed, bring the surface of the silvered plate lightly against it, moving the plate to and from, so that the whole surface becomes evenly polished. A little practice will soon make one proficient in this part of the process. The plate should have a very high polish. If it has not, it may be necessary to use a second buff wheel, employing rouge that has been moistened with alcohol, so as to get the rouge well into the rag of the wheel.

Just as soon as the plate is satisfactorily polished, carefully wipe off any adhering material on the outside edges with absorbent cotton and lay the plate, back down, upon one of the boards shown in Fig. 2 at A. It must be held in position by the small fastenings at B B B B. The sensitizing boxes must be in room No. 2, side by side, and illuminated by a pale yellow light. Remove the cover (C, Fig. 1) of the box containing the chlor-iodide of lime, and replace it with the board and polished plate, Fig. 2. Close the lid so that the active vapor may be kept in. The length of time required to sufficiently iodize the plate varies according to temperature. It may take ten seconds, or it may require more.

The plate must be removed and examined as soon as a decided yellow tint is observed upon the plate. Then, in the second box containing the bromide of lime, this will require about the same time as the iodizing. The plate is then removed from the bromide box and returned to the iodide box for about four seconds to give the final touch of sensitiveness.

It may now be placed in the dark slide (plate-holder), and the best suited for this purpose being the old-time wet plate-holder. (During all these operations the greatest care must be taken not to allow the fingers to touch the surface. Be careful to handle the plate by the outside edges only, spanning the plate between the fingers and thumb, so that the back of the plate rests in the palm of the hand.) The plate being in position, an exposure may be made in the camera. No definite time can be given; a trial must be made, so much depending upon the light, the lens, and the size of the stop. Perhaps an exposure of six or ten seconds may be required, or less. When the exposure has been made, close the holder, repair to room No. 2 for development.

All being in readiness, pour a small quantity of mercury in the bottom of the developing box at B, Fig. 3. The lid or cover should be lifted, the exposed plate removed from the holder and attached to a second board like Fig. 2, this being always kept for use in the developing box only. Now insert this board in the developing box, sloping as shown at C, Fig. 3, the exposed plate being face downward, as shown at D. Close down to cover; apply the alcohol lamp as shown at E. Just as soon as the mercury indicates by the thermometer 140° F., the alcohol lamp must be withdrawn. The temperature may rise a little after the lamp has been withdrawn, but it will soon fall.

Now observe through the window the progress of the development. To do this a small wax taper may be lighted, taking care to hold it some distance from the window. If the sensitizing and exposure have been correct it will be seen that a beautiful image has been procured upon the silvered plate. In a very short time development by the mercury vapor is complete.

The plate must then be removed and fixed in a solution of hyposulphite of soda of the strength already described. Previous to fixing, however, it is a good plan to pour a small quantity of pure alcohol over the film. Drain off the excess. Then lay the plate in a tray of clean hypo solution previously filtered. Rock the tray gently or use a glass dipping bath and dipper. In this case no dust will settle upon the plate, and fixation is quickly accomplished by lifting the plate up and down in the liquid.

As soon as fixing is complete, remove the plate, wash it with distilled water, face and back. Then place in a sloping position and pour hot distilled water over it, washing it well. The moment the

washing ceases, blow upon the surface. The plate will dry almost instantly by the heat, and the blowing prevents any spots or streaks being formed.

As soon as the plate is cold, the image can be examined. If the time of exposure as well as the other conditions have been correct, and a part of the subject's dress consisted of black velvet, this will be seen to be rendered more perfectly than by any other process in photography.

The plate must now pass through one more process called the gilding process. Arrange the plate upon a retort stand ring. See that it is level and resting by the corners only. Then take about two drachms of the hyposulphite of soda solution. Pour it upon the plate so that it is well covered without running off the edges. Apply the flame of an alcohol lamp beneath, yet not too closely, when it will be seen that the whole image appears to brighten up. The whites become brighter and the shadows appear darker. This operation will be complete in a minute or two. The liquid must not be allowed to boil. The moment this is complete the plate can be removed and washed again with hot distilled water and blown upon until dry. With the exception of a glass covering, the Daguerreotype is now complete.

A solution of iodine or bromine may be used instead of the lime compounds, but for economy and perfection of sensitizing, the chlor-iodide and bromide of lime cannot be surpassed. When a plate has been properly sensitized by these preparations, a view can be made, if the light is good, in the fraction of a second. In commencing the practice of making Daguerreotypes, one difficulty is always encountered viz., a streaky and uneven background. This is caused by the insufficient cleaning of the plate. Some operators hold that the best and cleanest surface is obtained by the use of precipitated chalk in place of tripoli or rouge. Whatever the operator succeeds best with, that is the material for him to adopt. Nothing but practice can determine this.

If plates are required of a less degree of sensitiveness, dissolve some crystals of iodine in pure alcohol, forming the tincture of iodine. A piece of porous wood may be soaked in this tincture, the alcohol allowed to evaporate, and this piece of board used instead of the chlor-iodide of lime. These operations must be carried on out-of-doors, as the fumes arising from them could not be endured in an ordinary room.

The chlor-iodide of lime and the bromide of lime need be used only in a small quantity, two or three drachms being all that is required in each sensitizing box for a plate, say 3¼ x 4¼. The plate should rest about three inches above the sensitizing material. The above preparations of lime will last in an active state for about two weeks, if kept well covered. The spent material should then be removed entirely and a fresh supply substituted.

Instead of a wooden cover as shown at C in Fig. 1, a slot may be made in the side of the box, with a piece of cloth glued at the top and bottom so as to allow a small sheet of glass to slide in and out. Exposure to the various vapors may then be made upon the plate by withdrawing the glass slide and pressing this slide in when sensitizing is complete. This is a good plan, but costs more to construct. In the event of this plan being adopted, a cleat must be fixed in the box, just above the glass slide, so as to retain the silvered plate.

If the buff stick is used to polish the plate instead of the buff wheel, all that is necessary is to use the tripoli as before, rubbing the buff briskly to and fro until the desired polish is obtained. If precipitated chalk is used, it is a good plan to moisten it with alcohol. Then apply it to the surface of the plate evenly with a tuft of absorbent cotton. Allow to dry, then polish, either with the buff stick or the rotary rag wheel. It will be noticed when the plate is sensitized that the color when taken from the iodine box is a beautiful full yellow, and after taken from the bromine box it is a pale rose color. Never allow the iodizing to go so far as to produce a steel color. If so, the plate will be useless, and the cleaning and sensitizing will have to be done over again.

PROFESSIONAL PORTRAITURE.*

BY CHARLES W. HEARN.

II.

EXPOSURE AND DEVELOPMENT. These two things go hand in hand; a proper exposure should always be given, whatever the lighting may be. The idea of exposing to correct bad lighting and developing to produce a result not seen on the ground glass is all wrong. The exposure should meet the correct speed of the plate for the lighting seen on the subject; and if the timing is correct, the actinic values of the lights, half-tones, and shadows of the subject will be easily produced (as far as the plate will permit†) by any of the score or more good developing formulæ in use to-day. The timing is of the utmost importance, as all future success hinges on good judgment in this respect, in which we are often unnecessarily careless. Although it is not always possible to time correctly within the fraction of a second, still there is enough latitude in all good plates to overcome slight errors in exposure.

The usual method of judging the length of exposure required is by the illumination on the ground glass, but the better way, and one that will assist you in thus judging correctly, is to gauge the purity of the actinic rays of your light, not only on the features of the sitter, but over the whole of the figure as well. (In passing, let me say that if the reader will make a study of the purity of actinic rays, noting the changes in results in any predetermined lighting, for instance, by the interposition of unwisely selected screens, to cut off the light on draperies, etc., getting results entirely "out of key," he will at once perceive the great value of a serious study of the actinic force of light. This matter will be more fully touched upon under the subject of "Lighting.")

The study of the light in connection with the appearance upon the ground glass will greatly aid in speedily acquiring a close judgment of the necessary exposure for a normal developer. Give full time, for nothing is gained by undertiming, while both that and overtiming will throw your lighting out of balance. The timing is correct when a normal developer gives you the subject in your negative as you lighted it. (By a normal developer is meant one which has power to produce the gradations from the strongest light to the deepest shadow in value, together with proper density in a reasonable time. This "reasonable time," of course, changes according to the developing agent employed, being with pyro usually from two and a half to four minutes.) When you are sure of the developer the exposure may be graduated as necessary.

There are many good reasons why a multiplying factor should be worked out with your developer, and if, after a fair trial, it proves practical, even the professional would do well to employ this method. Why? Because it will compel you to adopt simplicity in the dark-room, to make more correct exposures, and to get more even work on the average.

By adopting such a factor, it is wonderful what a mechanical method developing becomes. This idea of developing by the factor system will not, perhaps, meet with favor among professionals, because they have come to depend largely upon their experience to aid them in securing results and because it savors too much of the amateur, who is generally supposed to depend upon some such mechanical method to obtain a better average than his limited experience would warrant.

In commenting upon the former of these anticipated objections, I would suggest a train of thought for your consideration. Is your objection not based upon a feeling that

* This is the second of the series of educational articles to be contributed to this MAGAZINE during the year by Mr. Charles W. Hearn, Vice-President of the P. A. of A. The aim of the series, as proposed by Mr. Hearn, is to awaken photographers to the changed conditions governing present-day portraiture, the necessity for a closer study of art, and the practical advantages to be gained from association with the other progressives who attend and exhibit at our conventions.—EDITOR W. P. M.

† It is hardly necessary to state that all plate manufacturers produce special plates, which are more suitable for special purposes than those sold for general purposes.

you have erred greatly in either lighting or exposure, and hope to correct this in the dark-room? You feel that perhaps the lighting is flat, or too bold, and, therefore, you wish to hold it back, etc. You feel that you have over- or underexposed, and hope, by the use of bromide or contrast developer, soaking in water, weaker developer, etc., to pull your plate through. Or it may be that you fear that you may over- or underdevelop. Are not these your reasons? If your confidence in lighting and timing were greater you would not have this feeling, except in the matter of over- or underdeveloping, and the use of the factor system makes correctness in this detail far more certain than in the other way, where one is inclined to develop a little more or less, according to whether he is working for brilliancy or softness.

Whether it is true or not that the amateur employs this system to overcome his lack of experience is immaterial here, the question being as to its value for professional use. The answer to this question will, we think, be found by a careful perusal of the following brief explanation of the multiplying factor system.

Let the reader make up a sufficient quantity of whatever reliable developer he ordinarily uses. Now make two or three different exposures of a subject under exactly the same conditions, varying the time a little in each case so that some one will be found to be timed exactly right, marking on the plates before developing the exact time of the exposure given.

Develop each plate separately to the proper density, getting the best negatives possible without changing the developer, and using a fresh portion, without bromide, in each case. Note the number of seconds in each instance between pouring on the developer and the first appearance of the image. Note also the exact time it takes to finally develop each plate from the moment the developer is poured on to the end of development. As conveniences for this experiment may not be at hand, you had better have an assistant to take down the notes for you. After the negatives are developed and fixed select the best one of the lot. Divide the total time taken to develop by the time of the first appearance of the image and the result will be the "multiplying factor" of that developer.

This factor will be the same, even where there is considerable difference in the temperature of the room and developer. Moderate temperature in both instances is, of course, always advisable to obtain good quality in the results. This multiplying factor is practically the same with the same developing agent, even when there is considerable variation in the strength of the agent and the alkali, except in the case of pyro, the factor of which is less as the strength of the pyro is increased. For instance: Suppose you used a two and a half grain pyro and carbonate of soda developer, without bromide, and that (with the plate which turned out the best) you found that the first appearance required twenty seconds and, to fully develop, three minutes or 180 seconds. Then dividing the greater by the lesser the result would be nine, which would be the factor. If it had been four minutes or 240 seconds, the factor would be twelve, etc. You have thus established the fact that if you develop your negatives nine or twelve times as long as the time of the first appearance of the image, you will always produce negatives of like density with a pyro-soda developer of this strength, even with considerable changes of temperature. The writer has supposed that the developer used for the above experiment was capable of correctly rendering contrast and softness, and that it only required the factor as determined by the above experiment to produce this contrast. It is a very easy thing to increase the factor a little if more contrast is desired and decrease it if less. A few experiments with varied strengths of pyro in the developer would be interesting and valuable.

A few remarks at this time as to how far it is necessary to carry development in order to produce the desired lighting in the negative will not be amiss. The following suggestion is, however, valueless if gross errors have occurred in exposure. Where the light is brightest on the subject, the developer works with the most energy, although all the plate is being acted upon at the same time, wherever the lighting is such that the exposure can produce action. If there is no light, relatively speaking, or

if the light that falls upon the deepest shadows, whether of face or figure, is rendered more or less non-actinic, although it may apparently be bright (on account of its being filtered through a light-absorbing screen) it is seemingly incapable of being properly reproduced by the exposure usually given. In due time the developer will work down into the emulsion, and when the back of the negative indicates that the highest lights have been acted upon, as can readily be seen, then is the time to stop developing, and the fixed, washed and dried plate will give you the proper gradation in the same value as when the subject was lighted. As the developer can go no deeper than the glass, it is very apparent that if the process is prolonged the half-tones will also come down to the glass in turn, which would result in bringing these half-tones more nearly equal in value to the high lights, resulting in broader planes of light than was intended. It is not altogether, as many suppose, the result of too much light on the face, but more because the developing agent is too strong and development has been carried too far.

The same lighting would produce better modelling with weaker developer, not carried so far, and it is possible to produce flesh tints and have the high lights covered in the prints with bright lighting if the developer is worked with this end in view. The writer will go further and state that it is often the practice of our best workmen in using large plates to light this way with slight shadows, so as to obtain speed in exposure, relying upon the development to obtain "tone values."

One thing further. If the negative, the development of which was stopped when the principal high lights appeared on the glass side, is too thin, it has possibly been caused by the fact that, for fear you would go too far, you discontinued development too soon, or it may be that the developer is too weak in the strength of the agent employed. If the negative is too strong, if the half-tones are too closely merged with the high lights, ascertain first if they were not carried too far, then later see if the developer is too strong.

There is occasionally a tendency to fog in the plate which, although it fixes out, may confuse one in judging the back of the plate. This is sometimes caused by examining the plate too near the dark-room light during the early stages of developing. The use of the factorial system would, of course, overcome this, but if this be not employed it would be well to bear in mind that the most sensitive part of the plate, after it has been partly developed, is the back. This portion of the emulsion, besides not being protected by the stain or color of the developer, is not acted upon by the solution, so that great care should be exercised in seeing that the light one works with is a safe one and the examination very brief. The fog, when not occasioned by light in developing, may also be the result of overtiming, the remedy for which is obvious. Again it may be caused by the composition of the developer—too much or impure alkali. Sometimes, also, it is inherent to the plate, but in by far the majority of cases it is liable to be one or the other of the above reasons, especially if the reputation of the plate be good.

The above imaginary instances lead to another. When no image appears on the back of the plate and your experience tells you the plate is fully developed, if after fixing your supposition proves correct (unless it is a double-coated plate, the factor system in this case being invaluable), then the developer is lacking in strength or purity of alkali and is too strong in pyro, if this was the agent used. The alkali did not open the pores of the emulsion sufficiently to allow the developer to work down in the film, and intensity was obtained by the strength of the reduction of silver on or near the surface of the film.

Even if the density is correct in this surface-developed plate, its quality as regards values does not equal that produced by a more penetrating developer, and I would advise modifying the composition of the developer to permit this penetration into the film.

The above remarks relative to the proper extent to which plates should be carried before fixing are not an argument against the factor system, as they relate to matters which should be determined before obtaining the factor to work with. With metol, rodinal, ortol, etc., this multiplying factor is not likely to change as is the case with

pyro, unless possibly it may do so with a greater range of strength than the writer employed in his experiments.

When you have found the factor for your developer use it on the day's negatives, developing as you go along if possible, and note the results. With slight changes, perhaps, to modify or correct the factor, making it a little more or less, according to the appearance of the dried negatives, you will find developing this way a very simple and desirable method. It will at once make lighting and exposure more important than ever with you, and act continually as a check upon lack of care in these two very important details. It is right that this should be so. It should be a pleasure to feel that if you time correctly and have your model carefully lighted, there will be no doubt but that you will have just what you want in the negative, when otherwise, as sometimes happens, anxiety to make a good thing will often cause poor judgment in developing it.

One thing gained will be the evenness of the day's developing, and if there are bad results, the dark-room man and the operator cannot exchange compliments as to who is to blame. It puts the blame where it belongs and it is more easily traced.

It will be noticed that the writer has on several occasions mentioned "without bromide." The leading plates to-day do not require bromide to yield clear negatives, and there is always danger of "blocking up" the high lights, changing your lighting and producing uneven work. Again, unless bromide is placed in the developer before pouring on the plate it does not especially check development, and since it is not needed to make clear plates, the use of it to correct blunders does not appeal to us. On general principles its use is bad and should be discontinued in general practice, except in known cases of overtiming, when it is imperative that plates must be saved, it being impossible to make them over.

We have suggested modifying the alkali in the developer to meet the requirements of the plate, adding a little more if it is necessary to obtain greater penetration and proportionally less if it penetrates too quickly. Ascertain whether the developing agent is too strong in the former instance, or in the latter whether the plate is overexposed, or too weak in strength when the alkali strikes into the film down to the plate (the resulting negative not being strong enough, *i. e.*, lacking on contrasts). Experience will enable the photographer to readily diagnose what is required.

It would be well, however, to suggest certain facts which would combat any theories that this guide to the time to stop development is not practicable. The manufacturers of all standard plates are influenced in their results by some changes in the ingredients used in the emulsion and in the mechanical process of applying the same. The latter is not of so much importance as is the matter of the chemicals, and, of this, the quality of the gelatine itself is the greatest, preventing them from always giving us the same absorbing qualities in the dried emulsion on the plates.

Reliable manufacturers conduct their experiments at their own expense, *i. e.*, they do not, to save part of their expenses, dispose of the faulty emulsions by unloading them upon their customers; so we can rely upon the certainty that it is their aim to have every emulsion of a certain quality before it is coated. On account of these certain slight changes, mostly in the gelatine, the surfaces of some plates, as above said, are more susceptible of the ready penetration of the developing solution than others. For this reason these manufacturers are not favorably inclined to the plan of gauging the development by the appearance of the image at the back of the plate by reflected light, although they do indorse the idea of gauging it by looking through the plate from glass side.

The changes in the emulsions, however, are not so radical as to prevent modifying the developer to suit a trial plate or two of a new emulsion number; so we advise doing this, modifying the developer as necessary, adjust the factor again, and go ahead until the supply of plates is exhausted.

It will be noticed that the writer gives no formulæ for developer. This is not necessary, as good formulæ are obtainable everywhere. That published by the manufacturers of the plate you are using is certainly the best for that plate, and with any slight modifications as may in your judg-

ment seem advisable to suit the water, the light, etc., is just as good as any other formula.

In closing these remarks upon developing, the writer would urge those intending to try the factorial system, but who are not familiar with it, to consult publications on this development process, written mainly for the benefit of beginners, and amateurs.* The subject is very thoroughly gone into and much valuable information can thus be gained. The possible value is such that it should with justice be given a fair trial.

EXPOSURE METERS.

The professional is inclined to disdain the use of exposure meters in regular studio work, yet they are used, and to a greater extent than is supposed. They are unquestionably valuable.

Mr. F. M. Steadman, lately from Pueblo, Mexico, exhibited at both the Indianapolis and Boston conventions some excellent "House Portraits" which, besides showing great skill and artistic feeling, earned great commendation on account of the apparent difficulties under which they were produced, being made with an ordinary kodak, and developed in the kodak developing machine. As his method of timing is unique, I will give it here, Mr. Steadman having kindly, at my request, written it out for this purpose, arranging it for professional portraiture in the studio.

"The meter is simply a common notebook with a flexible, but rather hard, cover. Cut a square hole fully one-quarter of an inch in size in front cover, about an inch from the top and front side of the book, so that strips of Solio paper may be tinted through the hole.

Carry strips of Solio in the book, protected by black paper for safety, so as to have them always ready for use. To measure the light on the brightest object in the picture field, place one end of a strip of Solio paper behind the hole and cover it with a coin. Do this in subdued light. To use, hold the book near the face of the sitter, exactly facing the direction of the strongest light, slip the coin off the hole and count the time required to create just a plainly perceptible tint. If one has no method of counting the seconds, then as the coin is slipped off say "naught" and continue smoothly with one, two, three, etc., until the tint is secured. To gain experience give more than enough exposure the first time so as to get a good plain tint, and then gradually reduce it, until the tint produced is just plainly perceptible. If the brightest portion of the face is of moderate color, as is the average complexion, then this Solio tinting is the exposure to give for the large diaphragm. If the results indicate overexposure, take the second smaller diaphragm as the one which works with the plate which you use. If this is underexposed, then the diaphragm between the two. Do not overdevelop.

A good scheme, and possibly more practical for the professional, when it begins to turn darker for any reason, is as follows: In a good normal working light near the middle of the day every photographer should be able to guess his exposure so as to get the results which he desires with the diaphragm he generally uses.

On such a day fix the Solio in the notebook and hold in the place where the subject ordinarily sits when facing the light, and by the use of the coin give enough separate exposures to the Solio through the hole to create a test tint, just plainly discernible, giving carefully each time just the exposure you would give in taking a picture.

Suppose it would require six exposures with the coin to get the tint on the Solio. Then it would be known that, with the same diaphragm at any time, no matter how dark it was, the exposure in taking the picture would be one-sixth of what would be required to make the Solio test tint. So to make the measure under darker circumstances simply give enough counts to the Solio to make the test tint, and then in taking the picture give one-sixth as many counts and the exposure will be the same as a normal one under the normal light.

The writer thinks it would be a good plan to make a special gauge for this large work by some such system as the above, when errors in exposure are so costly and annoying.

* Development, by Alfred Watkins, the inventor of the factorial method, ten cents; and The Photo-Miniature, No. 34, price twenty-five cents; obtainable from most dealers.

STUDIO ADVERTISING.

BY W. I. SCANDLIN.

II.

THERE are two main reasons why the output of a photographic studio has established itself as one of the necessary luxuries of the land. First and foremost is, perhaps, that it caters to the vanity of its patrons and affords boundless opportunities for self-gratification in perpetuating attractive face and figure, effective gowns and all that is so fascinating to the feminine mind. Second, in the fact that it is the only method by which at a commercial price portraits of the family may be obtained and handed down to posterity. These two reasons alone have made for photography a place in the public esteem that will probably never be supplanted. Its importance is growing every day, and the more good work that is turned out, the greater becomes the demand for it. Under existing conditions there is no question but that the field of photography is becoming larger every year, and the only question to be considered is that of the individual studio and its ability to create the largest possible demand in its own community and to hold the custom thus created *for itself*.

The first step in this direction must, I believe, be made from within, and the photographer who is desirous of increasing his output and enlarging his field of operations must be thoroughly impressed with the dignity of his profession, the necessity of using every possible means for the improvement of his work, the raising of his standard of excellence and prices and keenly alive to every opportunity that he can develop for the keeping of his name before the people whom he desires to make his customers.

Just how this may be done to best advantage is a question that must be settled for each individual case. There are, of course, general principles of publicity that will attach to all photographic studios, but the local conditions must be taken into account in every case and those methods applied which will best fit into them and that will have the most direct bearing upon the special class of trade which the studio caters to. As in the case of the ready-made clothing firm and that of the exclusive tailoring establishment, referred to in my previous article, so must the photographer gauge his announcements to meet the conditions prevailing where his studio is located, and the man in the Western mining town, whose business is just as dignified and just as important to himself as the business of the most exclusive Fifth Avenue photographer, must fit his advertising methods to his clients if he will make them productive of business.

A well-fitted advertising plan should, however, be a part of every photographic studio's policy, and a certain amount of money should be laid aside each year to develop the plan on well-thought-out lines. This amount may be much or little, and need in no case form a very considerable proportion of the yearly expenditures if properly handled.

The reasonableness of this assertion becomes evident on examination of the policy of the general business concerns of this country and abroad, in almost every one of which a certain definite appropriation is laid out each year for publicity. The advertising expenses of any successful business to-day are just as much a part of the running expenses of that business as the salary account or the appropriation for heating, lighting, trucking and other essentials of the establishment.

Many photographers are coming to realize this fact, and are profiting by it greatly. There are, however, a great many others who do not seem to realize its importance and are inclined to underestimate its value in the building up of a successful business. A prominent advertising specialist in a recent publication says: "Constant iteration of even the most preposterous thing will in time shake the soberest judgment and in the average human being induce belief in the unbelievable. The kernel of the nut is constant, circumstantial, convincing reiteration of the point you want to make. That

is advertising—however you do it, it's advertising. By word of mouth—by word of type—in newspapers, in letters, in circulars, on signboards—anywhere and everywhere, saying over and over the same old thing, but each time with a little different slant to it—a different brand of corroborative detail."

In view of this quotation it is apparent that no one method will cover the ground completely or adequately, but that every legitimate means by which the good qualities of the studio output can be brought before the public forms a proper part of its advertising policy.

Let us, then, in this paper take up one single point which presents the best field upon which to elaborate at this time, namely: the display made by the photographer at the door or window of his studio. This is his own individual interpretation of an important part of the publicity question, and should have the most careful thought and the most artistic taste of the whole establishment to make it complete. The showcase or display window is, when properly arranged, the keynote of the quality of the work that its patrons may expect and demand in return for the dollars they pay its proprietor. Publicity of this kind is special publicity. It appeals to all classes of the community who are likely to pass the studio either in pursuit of their business vocations or on pleasure bent. It should, therefore, contain sufficient variety of subject and interpretation to appeal to both these classes. Its arrangement should be such that its appeal is practically irresistible, and the true value of this kind of publicity may be more easily gauged than almost any other kind that can be named.

If the showcase or display window does attract attention, if there is constantly or frequently grouped about it a collection of people intently studying its contents, it may be called successful. If, however, it remains unnoticed day after day, only attracts casual and careless attention, it may be taken as an indication that there is something wrong in the display or its arrangement, and the wideawake business man will see to it that something is introduced to create a sensation or an interest without delay.

One of the most attractive window displays to be seen in the entire length of Fifth Avenue, New York, is that of a photographer whose name is widely known and whose work has been displayed in many of the larger cities of this country. His facilities for making a display are undoubtedly exceptional, but there can be no question of his belief in publicity of this kind, nor of its value in attracting attention to his studio. Handsomely grouped upon a very dark velour background is always to be seen a large collection of fine platinum prints on modern mounts, of subjects attractive both for their costumes and for the public interest attaching to the sitters. The range of subject is such that the society woman, the city official, the man prominent in State politics and those interested only in good photography for its own sake may almost always be found before it. The interest awakened by such local displays as this is a live interest which may be awakened to a much greater degree than it now is in other localities throughout the country.

There should always be something in the photographer's show-window or display cabinet to which some local interest attaches. If he has not the advantages of larger city studios in displaying subjects of social or political prominence, there are in almost all communities views or happenings of more than passing interest. Such subjects offer means for window display that will attract and that will cause comment and exchange of opinion, in all of which the name and fame of the photographer will, of necessity, be associated.

Class advertising of all kinds is necessarily restricted in the field that it may cover, and this applies with particular emphasis to the showcase or display window. It is apparent at once that only those who pass or who may be brought into its vicinity by other announcements will come under its influence, and it is, therefore, all the more important that this influence be strong and continuing, that the impression left upon the eye and mind of even the passer-by be such as to recur and cause a more careful examination when next before it.

Many mistakes have been made in the arrangement of window displays, one of the most noticeable of which is in crowding the space at hand with a heterogeneous

mass of subjects, thrown together with too little taste and judgment and representing in addition to, perhaps, a few specimens of really good photography many others that are indifferent or wholly bad. Few studios of the average calibre can afford to show more than a few specimens of work in such a showcase as the writer has in mind.

There are many reasons for this, prominent among which is the fact that many subjects of excellent rendering and, perhaps, of people prominent in social life are barred from the window and cannot be used. It is, therefore, all the more necessary that the showcase be not crowded with many subjects, but that those it contains be selected with great care and that they be frequently changed, and that the keynote of each display be variety, good taste, and high quality.

The love of pictures is inherent in every community, and if a display contains these elements it cannot fail to interest and attract. With such a display as a basis for comment, criticism and personal advertising, there should also go some other method or methods calculated to reach a broader field and interest a very large proportion of the community who do not naturally come within the radius of the showcase. Some of these methods will be touched upon in future papers, but at this time it is too late to put any new plans into successful operation for the holiday trade. I believe, therefore, that the best results are to be looked for in making the showcase talk for the holiday business. See to it, also, that every patron has nothing but good to say of his work and treatment in the studio.

MEASURING THE PRINTING DENSITY OF NEGATIVES.

BY H. F. SWARTZ.

HYPO and advice are cheap, but all other photographic supplies cost distressing prices. The final destruction of the amateur's balance at the bank occurs when he purchases the paper and lantern plates designed to receive the finished impress of his genius. But the extremely exasperating feature of the printing process is the great waste of time and materials in the frequent underprinting and overprinting, due to the great variations in density found in any series of negatives. A year or two ago the writer began to dream of an apparatus for quickly and accurately ascertaining, once for all, the printing density of his several hundred negatives. The resultant device is so simple in construction and so satisfactory in use that he believes it will prove of service to other devotees of the dark art.

Advantage is taken of the ability of the eye to determine with reasonable accuracy when two surfaces are equally bright. The principle is that of the well-known Rumford photometer. Accordingly a translucent glass is illuminated from behind by a light placed at a fixed distance. This combination furnishes a reliable standard. Beside it is placed the negative to be examined, it too, being illuminated by a similar light. The negative is moved nearer or farther from this second light until its brightness is equal to the standard, and then from a properly constructed scale the density of the negative may be read directly. This reading is marked upon the negative, or its envelope, for future use. The whole process takes not over thirty seconds, and done once it is done forever.

By the same means it is possible to determine with great accuracy just how much "dodging" is necessary to secure the proper printing of an overdense sky or an underdense foreground or mass of shadow. The facility with which these latter data are obtained will prove a great effort to any photographer.

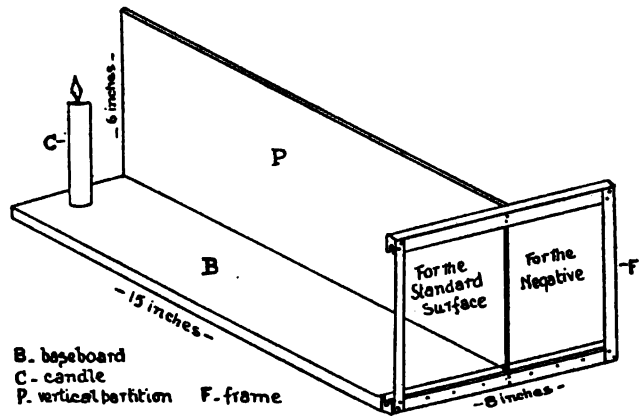
The construction of the apparatus is as follows, the dimensions given being primarily intended for 4 x 5, but usable without alteration for 5 x 7, and easily adapted to 3¼ x 4¼.

For materials secure an old cigar box, a strip of half-inch stuff 15 inches long and 4 inches wide, a piece of thinner stuff, say

quarter inch, also 15 inches long and 6 inches wide. In addition will be needed an opal glass 5 x 7, and two short candles.

First construct a frame to carry the opal glass, the translucent glass, and the negative to be judged. Cut from the cigar-box wood four strips each 8 inches long by ½ inch wide, two other strips of the same length, but only ⅜ inch wide, and finally cut two more strips each 6 inches long and ½ inch wide. Take two of the longer wide pieces and insert between them one of the narrower strips, and tack the three together so as to make a strip 8 inches long with a ⅛ inch channel down its length. Prepare another strip in the same manner, and then with the 6-inch pieces as ends make a frame, in and out of which can be slipped the 5 x 7 opal glass. Next take the two 15-inch pieces and tack them together at right angles, seeing that the ends come flush. To this nail the frame so that one-half of the frame's long edge is attached to the 4-inch piece and the 6-inch piece divides the frame into two 4 x 5 compartments. The drawing will make this clear. The half-inch stuff thus constitutes a base, and the quarter-inch stuff forms a partition lengthwise the base and vertical to it. Bore a hole the diameter of the candle in the baseboard just 14 inches back of the frame. Slide the opal glass into the frame, and the carpenter's work is done (Fig. 1.)

FIG. 1.



Our attention is next devoted to the standard of illumination. Expose a 4 x 5 plate to diffused light for a second or two and develop to the density of an average negative, fix, wash, and dry. Slip this translucent plate into that side of the frame which is over the baseboard and with the opal glass between it and the candle. This forms the standard of illumination.

Now for the scale. A table top is the most convenient, but a board may be used if it is not less than thirty-six inches long and a foot wide. We will suppose it is a table, and that the operator sits facing it at one end. Let a line be drawn on the table at right angles to the long edge and thirty inches from the end at which the operator sits. Use this line as a starting point, and draw other lines parallel to it and at the following distances, 3½ inches, 5 inches, 7 inches, 10 inches, 14 inches, 20 inches, 28 inches. Beginning at the 28-inch line, number them consecutively, No. 1, No. 2, No. 4, No. 8, No. 16, No. 32, No. 64. These numbers indicate the relative intensity of the light at the respective points. Place a candle at the starting point. This completes the scale (Fig. 2.)

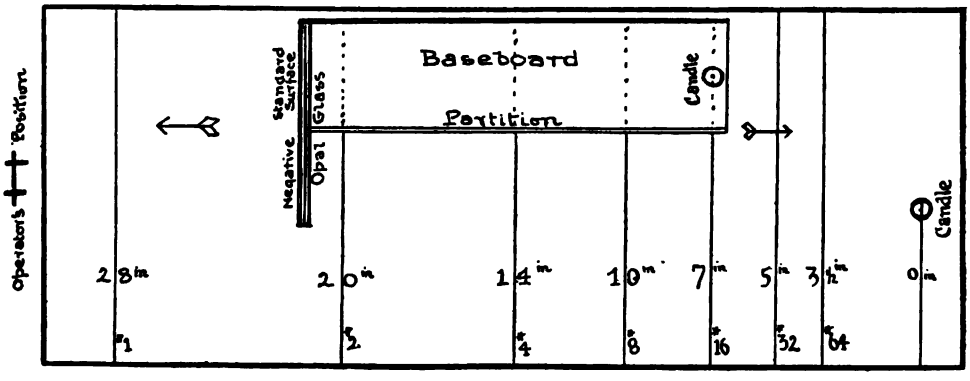
To use the apparatus, light both candles, and let them burn a minute or two to get an equal flame. Put the negative to be examined into the right side of the frame, and place the whole on the table, as indicated in the second sketch. Move the apparatus until the negative is exactly as

bright as the translucent glass in the next compartment. Then the scale number nearest the front of the frame gives the density of this particular negative. Proceed in the same manner with the other negatives to be tested. If then, by trial, it is found that for correct printing with a given paper and light a negative of any particular density requires a certain time, then another whose density reads twice as high would need double this time, and so on for other numbers.

If any portion of a negative is too dense or too thin to print well with the rest of the picture, secure a separate reading for the abnormal part, whence it is immediately apparent just how much shading is required to produce a harmonious print.

The only precautions necessary to the successful operation of this device are to see that the candles are burning with equal flames, and to take care that each candle illuminates only its own side of the frame. It is needless to remark that the room must be darkened to prevent any extraneous light from vitiating the results.

FIG. 2.



AMIDOL FOR DEVELOPMENT PAPERS.

BY H. C. A.

ARE you interested in innovations, and do you desire to keep abreast of the times? If so, I will take the liberty to acquaint you with a few facts.

Most photographers do not remember or do not know of the old albumen days, accompanied by difficulties and disappointments, when the photographer was compelled to get up before sunrise to silver and fume his paper for a day's work. If it clouded up and rained, there were time, patience, and money lost. What a boon to the photographer was the advent of the ready-prepared chloride papers!

Still, in those days there were people in ruts just as at the present time who could not immediately see the advantage of these papers, or were skeptical, with the result that they lagged behind those who at once realized their advantages.

History is repeating itself, for the lag-behinds of to-day do not realize the advantages of the newer wash—chloride developing papers. These papers are now on the market with the principal objection overcome, viz., an even coating of emulsion and uniformity of speed. Furthermore, the surfaces are such as to give all sorts of effects, including an approximation of carbon and platinotype. Blue-black, black, gray-black, brown-black and sepia tints are obtained by varying the strength of the developer and length of time in the fixing bath with alum.

How these papers simplify things! You do not have to depend upon Old Sol. Three hundred prints can be obtained (by hand) in a day. An enormous amount of time is saved, and last, but not least, no gold or platinum is used. Most of the papers on the market to-day are good, but what surprises me is that so little attention is given to the developer. It seems that those who are using these papers are satisfied with metol-hydroquinone, not realizing that more brilliant results than they are getting can be obtained with other developing agents.

I have tested these papers with every developer on the market and find that with amidol, and used with my own formula, results are obtained as with no other formula or developer. I make up a stock solution of

Water	40 ounces.
Sodium Sulphite (cryst.) . .	2 "

For use take of—

Above Stock Solution . .	10 ounces.
Amidol, dry	40 grains.
10 per cent. Solution Bromide of Potash	5 to 10 drops.

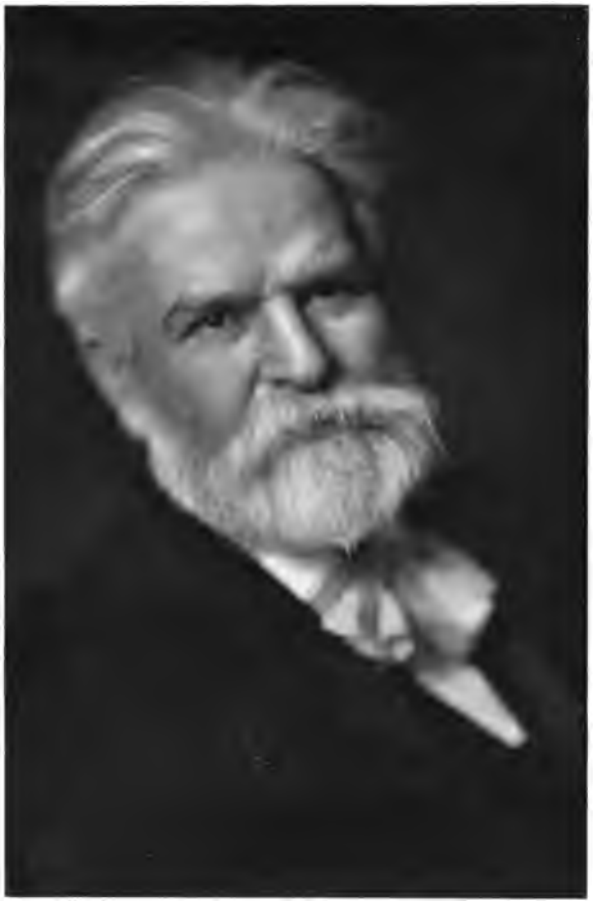
If I have not my weights handy, I use a fairly new ten-cent piece to weigh my amidol. This gives me exactly thirty-eight grains. Forty grains of amidol will produce a blue-black. This can be modified to a gray-black by using less amidol. I sometimes use bromide papers for contact printing and find the amidol gives me the same rich, brilliant effects, but I take only thirty grains to the above formula.

THE REMOVAL OF SILVER STAINS.

BY HAROLD BAKER, IN "THE PHOTOGRAM."

About once a month one sees a question repeated and answered as to the best method of removing silver stains from negatives. But negatives ought not to get stained with silver, because if they are varnished they will not be stained with ordinary printing, but only when water has been allowed to get on the paper and negative. It is never safe to print any negative worth keeping, on any kind of print-out paper, without varnishing; and if a negative is worth keeping it is worth varnishing. But even with the greatest care, negatives do get stained with silver, and there have been many cures suggested, but most of them involve considerable risk to the negative, and some are quite useless. If the stain is quite fresh a dilute solution of cyanide of potassium will remove it, but it may also reduce the delicate parts of the negative. Cyanide and tincture of iodine will also remove the stain, but if the negative is left in long enough it will remove the image as well. Some years ago I tried a special preparation sold for the purpose, but in my hands it produced no effect whatever. For a long time I looked upon a badly silver-stained negative as useless, but I saw a remedy suggested in a photographic paper which I tried and found most effectual, but as it is very simple and needs no chemicals that are not found on the shelves of every photographer, no one seems to think it worth trying, but writes to the editor of his favorite journal, who always recommends something which is very little use. The great advantage of the method I am about to describe is that it involves no risk to the negative, and it will remove stains of six or seven years' standing, even when they have gone right through the film to the back and can be seen on the glass side.

The first step is to remove the varnish, and this can be done with wood alcohol accompanied by plenty of rubbing with a tuft of cotton-wool, afterward drying the surface with a duster or towel. The stains will usually have an iridescent surface; this must be removed with finely powdered pumice stone or cuttle-fish powder. Very light rubbing will be sufficient; prolonged rubbing will reduce the density of the negative. When the surface of the stains has been removed, the negative is placed in a *freshly made* solution of hypo, and allowed to remain there until the stains have disappeared. The time necessary depends on the age of the stains and the strength of the solution. A recent stain will go in a few minutes, but an old one may take some hours, and the solution should be strong.



EDWIN MARKHAM

Copyright, 1903, by Pirie MacDonald, Photographer of Men, N. Y.

PORTRAIT GROUP

By J. C. Strauss, St. Louis

After Sir Joshua Reynolds' famous picture of the "Waldegrave Sisters"

THE ST. LOUIS POLY-PHYSIOG

By J. C. Strauss

See article under this title

CHILD PORTRAIT

By W. Dixon Ball, Missoula, Mont.

SUMMER FLOWERS

By W. Dixon Ball, Missoula, Mont.

INNOCENCE

By W. Dixon Ball, Missoula, Mont.

HOME PORTRAIT

By C. Durand Chapman, Newark, N. J.

PORTRAIT

By C. Durand Chapman, Newark, N. J.

THE IVES PARALLAX STEREOGRAM AND ITS USES.

BY CHARLES DE KAY, IN THE NEW YORK "TIMES."

SOME months ago we noted in these columns the award of the Royal Photographic Society's medal to Mr. Frederic E. Ives for his invention—the Ives-Parallax Stereogram. The subjoined account of the invention and, incidentally, of the part Mr. Ives has played in the development of photographic processes, will interest our readers.—EDITOR W. P. M.

The stereoscope was long popular as an adjunct to the photograph album on the parlor table, and, though its novelty is a thing of the past, its popularity is reviving again, because it is now produced at a price which adapts it to the means of the multitude. It is about to have a rival, and a serious one, if the invention made some time ago by Frederic Eugene Ives and recently perfected ever reaches the public.

In the windows of his laboratory hang photographic portraits on glass which give all the relief, all the contours of life; they are figures, busts, heads in the round as one sees them through the peepholes of the stereoscope; indeed, when exactly the right distance is observed, they are even more naturally detached from the background.

Mr. Ives has taken advantage of the same peculiarity of vision in the human eyes which produces the magic effects in the stereoscope; namely, the "parallax" between the right and left eyes. If you close the left eye you see the right side of an object, if you close the right eye and open the left you see the right side. In the stereoscope the glass through which you look at a photograph affects the vision, so that you see pictures of the two sides of the object which then appears in relief. In the "parallax stereogram," as the inventor proposes to call the new photograph on glass, the same effect of relief in a far more perfect degree is produced without an intervening glass or peepholes, and without cutting or carving the surface of the plate on which the picture appears.

It is not generally known that the half-tone process is due to Mr. Ives, but was not patented, and became general property through the treachery of certain trusted workmen. It was while he was experimenting on the screen used for the half-tone—it was in 1885 and 1886—that Mr. Ives came upon the idea of the parallax stereogram, but put it aside as a mere scientific curiosity. It was not until recently, long after he perfected the half-tone and invented his three-color process of photography, that he returned to the suggestion—and through a mere chance.

The Secretary of the Franklin Institute of Philadelphia happened to ask him for something which was new and of interest to place before the next meeting of the Institute. As the Franklin had given him many medals for various inventions Mr. Ives wished to comply, and suddenly recollected the parallax stereogram of sixteen years before. He wrote a paper and sent three exhibits to the Institute, then three more to London. The result was that he received an invitation to exhibit the process from the Secretary of the Royal Photographic Society at the meeting in the autumn of 1902. He carried off the only medal awarded in the scientific section given last year by the Royal Photographic Society.

Though the parallax stereogram is based on some of the principles used in the half-tone process, it has nothing to do with it. In an engraving the V-shaped tool of the engraver makes a V-shaped mark on the surface. Now the half-tone provides an optical V line on a smooth surface as a substitute for the V line dug by the graver. The essential is to place the line screen at an exact and definite distance from the photograph to be copied, in order to secure a correct representation of the light and shade in the original. The parallax stereogram is so different that they cannot be classed together at all.

A rude example of the principle is one of those signboards made of upright slats with letters on the two sides of each slat. When you approach from one direction

you read one sentence; when from the other, another. In the stereogram there are no projections on or incisions in the surface. But on each linear inch of surface there are 200 vertical lines, flat; and these are alternate. Namely, 100 lines are vertical sections of one side of the stereoscopic image and 100 are vertical sections of the other. The exact alternation of these sections, left and right, side by side, seen through a line screen by parallax of vision produces on the flat surface an illusion of relief, and if the eye is at the right distance the portrait or statue or landscape assumes the roundness and perfection of actuality, so that things appear detached from the background exactly as in nature.

It is seen, therefore, that the Parallax Stereogram photograph has nothing to do, on the one hand, with the half-tone, or on the other with what is called "relief photography," which is nothing but an embossing or repoussé of a photograph done by mechanical means to get an actual relief on the surface of the photograph.

It consists, in fact, of a composition of the ordinary stereoscopic picture in alternating lines, 200 vertical lines to the inch.

It is unfortunate that inventors like Frederic Eugene Ives should have to consider the commercial side of their discoveries, for it deprives the world of many possible inventions. The time and the energy spent in getting them before the public in some form which brings money enough to continue experiments should be reserved for investigation. The Parallax Stereogram may or may not be handled in such a way as to reward its inventor, but it would be far better if Columbia, Yale, or Harvard had a professorship to give him for research—or else Cornell, where he studied several years as a boy. Then his inventions might become public property at once.

As it is too late for this, we may consider in what ways the Parallax Stereogram is likely to find the greatest use. There is, of course, the wide field of portraiture on glass, the framed plate of glass to be hung in a window, or before an artificial light or lamp, or held at arm's length in the hand against the light. The perfection of contour and relief may be assisted by tinting the flesh of the portrait so as to remove the coldness of the black and white, thus obviating a certain ghastliness which is common to stereoscopic photography. But there are other fields. In itself the process is one that in schools and colleges cannot fail to interest classes in optics and form one of the exhibits when stereoscopy is explained. In medical schools and when teachers elsewhere wish to impart anatomy without the actual specimens, this process will be of the greatest value, because it gives objects in the round. For example, the organs of the body can be photographed by the Parallax Stereogram process, and will then give very different results from ordinary photographs or colored lithograhy, and far more satisfactory results. Microscopic preparations can be reproduced with relief instead of flat. Other uses it will find as people begin to realize that there is such a new departure in photography; it is enough to suggest these.

Its advantages over the ordinary stereoscope consist in the fact that no apparatus is required, and the pictures can be made much larger.

The inventor of the half-tone deserves great honor had he made but this one discovery, but Mr. Ives has also perfected the three-color process of photography, unsuccessful before his experiments, though foreshadowed by Clerke Maxwell, Charles Cros, and D. du Hauron. Three such inventions might well entitle him to a fund by national subscription in lieu of the government honors and aid he would have had long ago had he been an Englishman, a Frenchman, or a German. His life is typical of the practical American savant who makes his own way unaided.

Frederic Eugene Ives was born in Litchfield, Conn., in 1856. At Cornell he had charge of the photographic laboratory during 1874–1878, but took no degree, and has never had recognition from any college or university. But he is a fellow of the Royal Photographic Society, also of the Royal Microscopical Society of London, and of the American Association for the Advancement of Science. A special gold medal was awarded him by the Photographic Society of Philadelphia. He has had five medals from the Franklin Institute. In the Camera Club of New York he is

Chairman of the Committee on Scientific Research, and is an honorary member of many other societies of photographers as well as member of the American Microscopical Society. For his three-color process he has received the Progress Medal of the Royal Photographic Society of London this year, an honor never before obtained by an American.

These honors have come to him late in life, owing to the jealousy of prominent Europeans. Some foreign nobilities in photography were so exasperated by what they thought were the impossible claims of Ives, not having seen the actual results of his experiments, that they engaged in a violent polemic, and, such was the consideration in which they were held, that their criticisms served to prejudice the English and American photographers against the inventor. But the jealousy of theoretical investigators was outdone by persons who thought to steal the ideas of the inventor before they were patented. Twice his laboratory in Philadelphia was burglarized. Once he discovered that some one had hired an adjoining room and set up a telescope to watch him at work.

The supplement to the *Encyclopædia Britannica* has done justice to Mr. Ives. Sir William Abney gives him credit for the three-color process in the long article, "Photography," as the experimenter who first of all separated the three colors, red, green, and blue, by taking three positives illuminated by three lights and combining them on glass, so that looking through them superimposed the eye beholds objects in their natural colors. This discovery was the basis of what is called the Kromskop, an apparatus which by three superimposed photographs on glass makes a picture in normal coloration.

Probably Sir William Abney would have written very differently regarding Mr. Ives had he not seen the results of the three-color process, because he, too, was skeptical regarding the invention. But at a conversazione of the old and famous Royal Society the Kromskop was shown, and Ives was "justified by works." A sharp lesson was given to cabinet naturalists and theoretical photographers. Here was the actual thing—objects shown in their natural colors and the originals placed beside the Kromskop for comparison. Thus, brilliant candies in a box are placed beside a Kromskop, and when one looks through the glass there is a perfect reproduction in all the colors exactly like those in the box. Mr. Ives noticed with amusement that some people took the box of candies away and then looked in the Kromskop, evidently suspecting that the picture was merely a reflection of the original made by some arrangement of mirrors. When the little apparatus was first shown in Philadelphia one of his friends expostulated with him.

"What is the matter with you? How could you do such a thing?"

"Do what?"

"Why, practice such a trick on the public. You will be found out."

This friend thought that Ives had placed the objects themselves in the Kromskop and was trying to hoodwink the public into believing that what they saw was a color-photograph.

A rare combination of technical skill and the inventiveness that supplies the necessary appliances are required in order to do what Mr. Ives has done. It was away back in 1861 that Clerke Maxwell gave the hint of three-color photography, and from that time on how many persons have tried to realize it? Because others were not able to do it themselves they jumped to the conclusion that it was not feasible, and after doing great injustice had to see it proved by other wits than theirs. When we find such a combination of inventiveness, skill, and quiet persistence under obloquy we ought to do what we can to make further discoveries, further inventions possible. It is wonderful what honors and emoluments are heaped on persons who destroy property and slaughter men, what salaries are voted those who talk twaddle from pulpits, who obstruct legislation in Congress and ruin corporations by their foolishness. But the inventor, the poet, the creator is left to waste his energies by a fatuous world.

The simplest way of getting rid of the gloss of a carbon print is to immerse the print for ten minutes in wood alcohol immediately after the final washing.

PIGMENTS AND DYES USED IN PHOTOGRAPHY.*

BY FRED. EDWARDS.

THE increasing popularity of the carbon, gum-bichromate, dusting-on, and other pigmented colloid processes, and also the extensive application of pigments and dyes in orthochromatic and three-color photography, have convinced me that the time is surely ripe for a treatise expressly devoted to the pigments and dyes employed, or suggested for employment, in photography. My conviction has been strengthened by the knowledge that in many pigment processes the workers thereof prepare their own emulsions and papers, and, furthermore, that the possibilities of these processes, especially the gum-bichromate, are capable of wider expansion. Furthermore, much misconception has hitherto existed as to why we are limited in the choice of pigments for our processes, and, why certain beautiful pigments are eliminated from our formulæ. In this respect I shall endeavor to differentiate between a permanent and non-permanent pigment, although, as to the ultimate suitability of certain pigments for process work, every worker must be a law to himself. To enable me to condense multum in parvo, I have arranged the pigments and dyes in cyclopædic form, in alphabetical order, and made use of symbols and signs, to denote certain classifications of origin, etc., that require constant repetition. These symbols are as follows:

Symbols and Signs. O. denotes organic origin, *i. e.*, vegetable, animal, and created life; IN., inorganic origin, *i. e.*, from rocks, minerals, etc.; †, permanency of pigments.

O. Aniline. $C_6H_5(NH_2)$. Phenylamine, amidobenzene, a derivative of coal-tar. The basis of many dyes used in photography, especially in color work.

IN. Aurine. A dark, gum-like product, produced by heating a mixture of oxalic and sulphuric acids and phenol, and dissolving the product in ammonium hydroxide. The solution is then evaporated, a crystallized precipitate, soluble in alcohol and ether, resulting. It absorbs the yellow and green rays of the spectrum, and is used as a sensitizer, also as a dark-room fabric.

Azaline. A dye composed of a mixture of cyanine blue and quinoline red. Is soluble in alcohol, forming a carmine-red solution, which absorbs the orange-red and yellow rays of the spectrum.

O. Black. Bitumen or asphaltum, a thick, black substance from Judæa. Is used in photography in photomechanical processes for its property of becoming oxidized by light, losing its solubility in its solvents, chloroform, carbon-bisulphite, etc.; also as a black varnish (in solution) for positives and other purposes.

Black. O†. Carbon is the soot of vegetable matter obtained by destructive distillation. Is a very permanent pigment, from which the carbon process derived its name.

O†. Ivory, is carbon obtained from animal charcoal.

O†. Engraving, is a compound of carbon 3.8, carmine lake 4, and indigo 2 parts.

O†. Warm, a compound of carbon 6, carmine lake 6, burnt umber 4, and indigo 2 parts.

Black. IN. Oxide of copper of tenorite, is used to blacken diagrams, camera interiors, etc., its low reflecting index rendering it especially suitable.

O†. Lampblack, is carbon in a very fine state of division, and is preferred to carbon.

Blue. The blue colors principally furnish us with color sensitizers for the yellow and red rays. Only four are available for processes.

Blue. IN†. Azure, a beautiful sky pigment, composed of zinc oxide 1, lead glass 4, and deep blue 2 parts.

Blue. IN†. Brunswick, is obtained by

* We have many inquiries as to the different dyes and pigments used in photography, and reprint this paper from the *Amateur Photographer* for the convenience of our readers. The dyes mentioned may be obtained from any importing chemist such as the Farbenfabriken of Elberfeld Company, or the Berlin Anilin Company, or Eimer and Amend, all of New York.—EDITOR W. P. M.

precipating alumina from a solution of alum, and adding the sulphates of iron and baryta, prussiate and bichromate of potash.

IN†. Cerulean, is much used for coloring pottery, and consists of 79 parts of gray-flux, 7 of cobalt-carbonate, and 14 of hydrated carbonate.

IN†. Cobalt, is oxide of cobalt. The exquisite blue of this compound cannot be matched, and is very permanent.

Blue. Cyanin, a useful dye in color work, absorbs the yellow and red of the spectrum.

Blue. IN†. Deep, is oxide of cobalt compounded with borax, sand, and zinc oxide by fusion.

Indophenol or naphthalene-blue, suggested instead an azaline in combination with malachite green as a color sensitizer for the green, yellow, and red rays.

IN†. Prussian Fe_6Cy_{12} is a pigment produced by the action of light on potassium ferricyanide and iron-ammoniated citrate.

Blue. IN†. Turquoise, a pretty pigment composed of cobalt oxide 3, alumina 4, and zinc oxide 1.

Brown. Brown pigments, chiefly mineral, are used sometimes in the raw, but generally in a burned state.

O†. Bistre, a rich, warm, brown color prepared from the soot of wood, especially beechwood. A very suitable pigment to show effects of light and shade.

O†. Amber, a particular form of amber in a burned state, obtained by mixing it with Prussian blue.

IN†. Brown, burnt umber, a semi-transparent russet-brown pigment, derived from manganese. It mixes well with other pigments, and dries quickly.

IN†. Ochre, is anhydrous oxide of iron.

IN. Sienna. Burnt, a transparent orange-red pigment, derived from terra di sienna, an ochreous iron earth. It mixes well with other pigments, and very fine greens are obtained by mixing it with Prussian blue.

Chocolate, a popular compound pigment, composed of Chinese ink 3, purpurine 5, and alizarine in soda 5 parts.

Brown.† Dark, a compound pigment containing indigo 2.5, Indian red 6, carmine lake 1.25, Vandyke brown 4, and lampblack 30 parts; very suitable for portraits.

IN. Cappagh, pigments of various shades of brown, extracted from a bituminous earth, containing oxide of manganese and iron. The name is derived from Cappagh, near Cork, Ireland; but the pigment is also known as manganese brown and enchrome mineral.

O†. Reddish, a pretty portrait pigment composed of Indian red 10, carmine lake 6, and Chinese ink 8 parts.

Brown. Red, a compound of Chinese ink 6, carmine lake 8, and Vandyke brown 8 parts.

Bice. †O. Bice—or bise—a pale blue pigment prepared from the lapis armenius. Bice bears the best body of all bright blues, and after ultramarine is one of the best of colors.

IN. Rock blue and green are prepared from native copper carbonate.

O†. Carmine. The coloring matter of the cocus cacti, or cochineal insect, consists of carminic acid united with alumina, or oxide of tin. Is extensively used in the carbon process to produce the warm black and other pigments, and was formerly used to stain the red positive in three-color printing.

IN†. A fine pigment produced by the amalgamation of mercury and sulphur.

Chlorophyll. O. The green coloring matter abstracted from plants, is used as a sensitizer for the red and yellow, by Ives and others. Is soluble in most ethylenes, its solutions showing a red fluorescene.

Eosin. $C_{20}Br_4H_8O_5$. A yellow coloring matter, and the base of the eosin derivatives, all of which are efficient color sensitizers for the green and yellow. Is soluble in most spirits.

Erythrosin. One of the best derivatives of eosin sensitizers for the yellow, and is used to stain the red filter in three-color work.

Fluorescein. A yellow coloring matter, recommended as an addition to developing solutions, to prevent fog, by absorbing erroneous light.

Green. Green colors are produced principally by mixing blue and yellow pigments together. They are nearly all poisonous.

Green. Aldehyde is an optical and

chemical sensitizer at the same time; it absorbs iodine and bromine, and gives sensitiveness to the yellow rays.

IN. Copper arsenite is a pretty green pigment composed of copper and arsenic (Scheele's green), mixed with malachite green and naphthalene blue; it sensitizes for the red rays.

IN†. Cobalt. One of the most beautiful pigments derived from cobalt. Very permanent and suitable for processes. Mixed with signal green, is used to stain the blue green screen in three-color printing.

Indian Ink. O. is carbon, or lampblack, suspended in a colloid substance.

Indigo. O. A beautiful blue dye extracted from a number of tropical plants. One of the constituents of dark brown and engraving black pigments.

Litmus. O. A blue coloring matter derived from the Rocella unctoria. Is used to denominate acid and alkaline solutions.

Muriate of Copper. IN. A green pigment resulting from the union of muriatic acid and copper in equal parts. A pretty green process is based on this union.*

Opaque. A pigment of reddish hue; as a paste it is used for blocking out, etc.

Primuline, is golden colored amorphous powder. A pretty negative process is based on the property of primuline of becoming nitrated by nitrous acid and transformed into a light-sensitive derivative. The resulting combination is diazo-primuline, producing naphthol red when developed with B-naphthol; yellow with phenol; orange with resorcin, etc.

Red. Ethyl or chinoline, chinaldin, indoakyl, a dye used by Dr. Miethe to orthochromatize plates.

†Brown, a pretty pigment, composed of Chinese ink 6, carmine lake 8, and Vandyke brown 8 parts.

IN†. Red-lead, a fine scarlet red pigment of chromic acid and lead.

Naphthalene increases the sensitiveness of silver bromide for the yellow region (from near D to C), as also for the violet region.

†Transparency. A popular pigment composed of carmine lake 10, Indian red 6, and Chinese ink 4; very suitable for children's portraits.

Rosaurin. A dye frequently substituted for aurin. Is used to stain, or dye, fabrics for dark-room windows.

Red. Rosaniline nitrate is often sold as azaline, new red, and fuchsin; used in orthochromatic photography.

†Sepia. A fine combination of lampblack 4, and sepia de Cologne 35 parts.

IN† Ultramarine. A blue pigment highly valued for the purity, delicacy, and permanency of its color, formerly obtained from the lapis luzuli by a tedious process. True ultramarine is rarely used to-day, the artificial product, manufactured from china clay, sulphate of iron, carbonate of soda, sulphur and carbon, the proportions differing according to the shade of color required, being cheaper.

IN† Verdigris. A pretty green pigment, derived from copper: formed by corrosion with an acid.

†White. Lead, or Pattison's white, is an oxychloride of lead.

IN† White. Pear, a beautiful pearly white pigment resulting from the union of bismuth and chlorine, *i. e.*, trichloride of bismuth.

The yellow pigments are derived chiefly from lead.

Yellow. Turner's is merely another form of oxychloride of lead.

IN. Chromate, is lead chromate.

IN. Dye, for fabrics, is a mixture of lead chromate and lead oxychloride.

IN†. Ochre, is a hydrocarbon of iron.

Zylidine. Zylidine scarlet, a dye recommended as an addition to the developer to prevent light fog, as it absorbs all erroneous light.

* See "Cyclopædic Photography," Wilson.

This is the Twentieth Century. We have to thank a well-known man for a batch of very good photographs. Among them is one of a lady just about to vigorously drive a golf ball. She is fully and correctly attired from cap to heels; but she is going to drive the ball from a skin rug. The composition is helped by a plush chair, and she stands before a background representing a drawing-room interior.

A TIMELY TOPIC.

BY C. A. ZIMMERMAN.

It is not so long since, when our art was in its first crude or infantile steps, that business flowed naturally to the humble tent, wagon, or refined city studio. Fairly rapid were the transitions in those days from the mournful black and white silhouette of our forefathers; from the Daguerreotype, ambrotype, leather and tintype to the photograph which has endured, with some modifications, to the present time; it seems moreover to be a stayer.

Many of us can possibly recall the surviving picture of the Frenchman Daguerre, the inventor of the Daguerreotype; he is represented sitting in an ordinary chair upon the back of which, his elbow resting, his head is supported. The early types of that process, by reason of iodine being the sole excitant with silver, required a very long exposure. It is stated that Daguerre, who had been requested to sit for his portrait upon the roof of his laboratory, which was in the blazing sunlight, for better illumination, exclaimed, after fifteen minutes of this torture, while tears of physical as well as mental suffering coursed down his cheeks: "Pshaw, this art will never amount to anything!" He lived of course to see, through the efforts of his confrère Niepce de St. Victor and his own, together with the improvement in lenses, a spontaneous recognition of the art. The most elementary results in those days were appreciated and looked upon as little short of miraculous; they found a sale and at good living prices.

All this is now changed, and mediocre work commands only a price commensurate with its quality. A public that received its education apace with the photographer began treading upon the heels of the very best workmen. For a time there was an era of almost nauseating sameness in the work of studios. The public could not accept forever the conventional monotonous posing, lighting and finishing. Given a picture or two at random from a hundred or more studios, cut off the names, and the collection would pass for a "group" of exhibition work from anyone of the contributors. We are all aware of the causes that made this necessarily so.

The same formulas, plates, paper, mounts (haven't we all given orders for cabinet mounts of from one to twenty-five thousand of just that color) backgrounds and lighting were leading all to a uniformity of result. This was done by nearly everyone as long as the pictures sold; but there came a reaction, and the tiresome sameness coupled with low prices was the cause.

The existing conditions, which I have tried to sketch briefly, together with some new blood and sinew recruited from the ranks of the seried hosts of the amateur, were responsible for what has been termed a new school of photography. Minds unfettered by conventional work were better fitted perhaps for initiating a method unlike the then accepted work.

There are, however, notable instances of old-time and professional photographers joining, nay, leading in the highly original and commendable results. The artist painter passed through just such a probation, and after using wooden mannikins and getting wooden results, employed living, breathing models. We have all heard of the collection of oil portraits by a rising young artist whose solicitous friends gave an exhibition of his labors by collecting as many as they could of his best, and when hung found that they were all in left profile view.

Grace and naturalness should go hand in hand, but in most studios nature is continually interfered with in the effort of following out the conventional and obsolete stock poses. Here is an illustration to what a pass this machine posing may come. I have in mind a studio, upon the dark-room door of which were tacked twelve photographs in three rows. The first four were of men, the next four were of women and the last four were children's heads. Each row contained four different poses and were marked respectively 1, 2, 3, 4, and so on up to eight. During the absence of the proprietor the dark-room operator officiated, and the reception-room

girl had a set in duplicate of the photos on the dark-room door. The proprietor, not having a great deal of confidence in the artistic ability of his proxy, instructed the aforesaid girl to "sum" up the prospective sitter and mark the coupon according to her judgment of the sitter's requirements. On a recent visit I chanced upon the girl and operator in a heated discussion, and this is all I could gather as I passed, but it was enough: "I don't blame her for wanting to re-sit, I marked your card for a No. 2 pose and you gave her a No. 4 position!"

Mind, I do not advocate the adoption of the new school, for such a radical departure might lead to disaster, but rather make a close study of it as well as the very latest indorsed work until you can either comprehend it or reject certain examples of it. Shorn of its freaky "reaches" and faddish misapplication, there is much good to be found and applied. There certainly is an abrupt departure from the "map" or "front" or "side elevation" style which we have had to accept in too many pictures of persons. The public is not slow to recognize originality and versatility in your work and to regard it as worthy of the best pecuniary reward. The day of the cheap and prosperous studio has gone, never more to return; one does not care to have a "rogues' gallery" (in effect) of one's relatives, friends, or of public men.

At this point it may be proper to add a few words that might clear the way for a betterment in output and increased income, for one must follow the other. A good many have been quick to see that a change was coming and was necessary, and are by this time well on the way and extremely happy over the result. No two workers adopted the same course; I cannot prescribe one for you, because the clientele you have cannot be known in every instance. If perhaps you will calmly look the situation over you may perceive that you have been working in a rut. Once this perceived, the way is easier. We all know good from bad work, and, if bad, the work must be improved. Successful conventions offer the pleasantest way out of the difficulty. Comparison of work; comparison of localities where so and so is successful with such and such work; your own ability in an artistic way; all this and much more is to be considered. The best journals, all of them profusely and beautifully illustrated. Note the names of the best workers, those that appeal to you most. Don't imitate, but digest well and make copious notes. Get perfectly familiar with all the different kinds of work. Do not condemn any accepted work hastily, for you might have to eat your own words on attaining more light.

Are you working under a good light, facing correctly? Have you a clear sky to derive your direct light from? Do you light a sitter according to his requirements? Do you contrast your lightings with the proper background tones? For brilliancy, do you vary the distance from sitter to light? Is your chemistry as good as your skylight handling? After doing your best under the light does your dark-room work support you in that? Are you killing the life of your pictures by over-retouching, turning out baby faces on adults? Are you too indolent or too parsimonious to take a few extra steps and to use up a few more plates than just barely enough? Finally, are you paid enough for your best and most earnest efforts? Do you send your work out dainty, clean and neat? This is the age of refinement and cultivated taste.—*Northwestern Recorder.*

Bromide Exposing. The results ranging from under- to over-exposure tend to be hard soot and chalk, plucky, soft, flat, or fogged.

Bromide Vignetting. Numbers of photographers make their bromide vignettes too hard. The transition from the print to the white of the paper is too sudden. It is the result of a thoughtless following of the custom adapted for printing-out papers. Place the vignettes further from the negative, and so give the light a chance to diffuse.

A photographer who prints (bromide paper) post-cards in wholesale quantities sends us the following formula: Metol, 30 grains; hydroquinone, 125 grains; bromide of potassium, 40 grains; carbonate of potassium, 1 grain; sulphite of soda, 30 ounces; water, 30 ounces. Use one part of developer to two parts of water.

REPAIRING DISHES.

We propose from time to time to give, in the words of the title of this article, a few practical hints from our own and our contributors' practice, embracing such subjects as the use and abuse, the wear and repair, of the sundry articles that go to make up a working photographer's complement, having had brought under our notice numberless cases of waste and loss that could easily have been prevented by the exercise of a little thoughtfulness and the practice of more careful handling. One of the heavy minor items of outlay a photographer is put to is the replacement of dishes, broken or "used up" as they are called —"Please, sir, the twenty-inch papier-maché dish cannot be used any longer," is an example of the sort of thing a principal is often told, and he feels he has to put his hand in his pocket at a time, perhaps, when business is at a low ebb, and he wonders why dishes will not last forever. Now we wish to say that there is no reason why even a papier-maché dish, so often chosen rather for its unbreakableness than its superior lightness should not, properly treated, last a lifetime, and we certainly have seen such articles twenty years old that were virtually good as new, and, in some respects actually better.

First, as to the treatment of dishes generally. No dish or tray, whatever used for or of whatever material made, should be put away in its place without being thoroughly clean and wiped inside and out at least with a damp sponge. If a dish is used for developing at one time and mercurial intensification another, or if for one purpose alone, it will, if put away uncleansed, very soon become caked and stained with chemical matters, which after a while will become part and parcel of the dish itself. A light colored celluloid dish will show visually how very soon stains and deposits will accumulate. They are, however, not seen on black dishes, and being unseen are too frequently ignored. The mere act of diligent cleaning will do much toward preserving the life of these business necessaries. But accidents will happen through careless keeping or otherwise, and the time will come when apparently they will have to be put "on the shelf." But taking, say, one of the so-called porcelain dishes, if it has the spout knocked off or has met with a fall and been broken in two, that is no reason for discarding it. Dishes are wanted for washing, for example, as well as holding chemicals, and for the former purpose a neatly repaired dish is equal to a new one. Dealing first with a dish that has been broken into two or three pieces we recommend that it should not be treated amateur fashion, lest at some critical moment it give way and disaster follow. What we advise is that it should be put in the hands of a man who undertakes the repair of domestic utensils, with instructions to rivet it. There are such in most towns, and where one cannot be found, the local earthenware dealer will usually take care of it. The riveting is clever work. The article, after joining with white of egg and quicklime, is drilled in several places on each side of the join and clamps of wire neatly put in, making a strong, enduring job. We do not recommend anyone to do this for himself, but may say that if any of our readers are clever enough to do it they need no hints from us. To enable anyone to judge whether it is worth while to have these repairs done, it may be stated that the usual charge is fifteen cents per rivet inclusive. If employing a man of no fixed address the work should not be given to him until the charge is agreed upon.

If, however, it is only a case of a small piece of the side or the spout being broken away, the repair should be done on the premises. White of egg and quicklime in powder needs practice in using, and, not being readily available, the article is likely to be left unmended if it be decided to adopt this method. What we advise is to cement the pieces on by means of fish glue or seccotine, or some one or other of the ready-made glues now so common. The secret of using them is to see that the edges are clean and that as little of the glue as possible is made use of. After repairing thus they should be put aside in a warm, dry place for a week or two until thoroughly dry and hard. Then a piece

of cotton-wool moistened with formalin should be laid against the join on each side and allowed to remain in contact for half an hour. There will then be little fear of their giving way. Still, as they may have to hold water occasionally for a period of hours it would be far better to put a protective waterproof varnish over and round about the join. One or two coats of stiff celluloid varnish (made by dissolving in acetate of amyl old films from which the gelatine has been removed) may be used, or the stiff shellac varnish we recently described (though this may shell off unless very thickly coated if water is to be long in contact with it); or last of all, and only objectionable on account of its "patchy" appearance, a quick drying japan black. This is quite waterproof, easily applied, will not chip away if put on a clean surface, and when dry is virtually inert as regards chemicals. A dish cemented as described and then varnished with japan black may be used for any purpose in photography. Some people like to make doubly sure by securing by varnish to the back of the dish a piece of strong linen or canvas. It is needed under the plan we describe. There must be in existence thousands of dishes put aside as useless which by these means could be restored to active life.

In our first paragraph we promised to give the results of some work done under our own supervision with regard to papier-maché dish repairing. The particular dishes we refer to were a large number, nearly a dozen, about twenty inches by sixteen inches in size, and having wooden sides and papier-maché bottoms, made in thoroughly workmanlike style, but which, in course of use, had become unfit for further service by reason of numerous breaks in the surface, exposing the paper pulp in some cases to such an extent as to cause actual leakage, besides causing contamination of solutions. It will be productive of most instruction to detail the actual course of procedure adopted.

In the first instance, the dishes were well sponged out and put in the sun to dry. It should be stated that originally the wood sides had been protected inside and out by a coating of shellac varnish, but this had entirely disappeared. The woodwork was given two coatings of the thick lac varnish described by us a little while ago, then the blisters and bare patches of the papier-maché were shaved level with a sharp chisel, and the whole surface smoothed by being well rubbed with emery cloth. After this two coatings of the same varnish were applied, with an interval of three days between them, to allow of thorough hardening. After a further seasoning they were taken into use, and appeared to answer admirably. But, after being employed for development for two or three weeks, we found the shellac began to chip off. As this was rather disappointing, we determined to try a substitute for the lac solution, and our next essay was with a varnish which seemed to promise well—a so-called "black enamel" for cycle ironwork. Treating another dish in precisely the same manner as the first, but with this cycle enamel in lieu of shellac varnish, we obtained an excellent hard surface, that appeared in every way superior to the latter. But as we found that this enamel was made with spirit and was probably a lac solution, charged with aniline black, we watched its action very closely. The coating of black was excellent—bright, glossy, and hard—but, in a space of time about as long again as with the first, it also showed signs of giving way after a while, and we finally decided that it was necessary to adopt still another varnish to obtain thorough efficiency. Our final selection was a good Japan black. This was applied with an ordinary varnish brush, two coatings being given, with again an interval of three days between, the additional precaution being taken of placing the dish, after the varnishing had well set, in a very hot cupboard, conveniently situated over a hot-water tank. As we wish our readers to have the benefit of our failures, we may say that a couple of dishes were spoiled by putting them in the sun to harden; the whole surface became covered with minute semi-blisters, and had to be rubbed down with emery cloth and re-varnished. We use the word varnished rather than japanned, as the latter, in its true meaning, would involve the exposure of the articles to the heat of a stove at a temperature of about 280°, and this we had no facilities for. The stoving appears to bring about a partial

decomposition of the japan, besides driving off the volatile solvents, and has the effect of producing an astonishingly hard surface, which cannot be indented or scratched by the finger nail. Our dishes, however, when seasoned in the hot cupboard as described, produced a by no means contemptible imitation of stoved articles. In actual work they have, after several months' use, remained quite intact, neither chipped nor blistered, and in some respects superior to new dishes, as, with one exception, to be described, there is no tendency for the black varnish of the sides to give way, while the shellac varnish, as originally applied, in course of use is apt to succumb to the action of the alkali of the developer, and eventually to leave bare wood. This is disadvantageous, as there is then a tendency for the various solutions employed to soak into the wood and contaminate future contents of the dish. Further, and in regard to the exception just named, some of the dishes (which we had found stored away in a cellar, where they had evidently been for many years) were so contaminated in this manner that the japan did not thoroughly adhere, and came away in patches. To make a workmanlike job we ought to have immersed the dishes for several days in water to get rid of what was evidently hypo soaked through and through the wood. We had remaining on our hands four dishes in which the bottoms were actually rotted through and broken into holes. These we soaked for two days overhead in water. Yet so deeply had the salt, whatever it was, penetrated that when wiped with a cloth and put aside to get thoroughly dry, they showed a white efflorescence on the surface which required a further soaking to get rid of. We had a very efficient dish made out of one of them by cutting with a saw the whole of the papier-maché bottom with the exception of a margin of three-quarters of an inch. A piece of fluted glass fitting not too tightly was secured to this margin by putty, and kept in position by nailing thin strips of wood, also puttied, inside the dish and against the glass. After a month or two for the putty to get quite dry the whole of the woodwork was varnished with the japan, and we had a dish superior to any we have ever seen. We should note here that before pressing the glass into its bed of putty the margin of the glass had previously been given a coating of white lead paint and allowed to set. Whenever glass is to be laid in putty it is always better thus treated if it is to be completely watertight. The same rule applies to the glazing of a studio roof. We have not seen any glass-bottomed dishes where fluted glass has been used, and we herewith present the idea to the makers of such dishes, the object being to render it easy to remove a negative for the purpose of inspection. A 12 x 10 negative, for example, is next to impossible of removal from a surface of smooth glass when it is covered by the developing solution. We experienced this difficulty even with papier-maché dishes, and provided a remedy by dropping minute drops of hot sealing-wax at intervals, pressing them almost flat by a piece of metal (in our example a bronze coin was used).

To any possessor of a glass-lined dish we strongly recommend the treating with the black japan all the exposed parts of the wood; it will greatly extend its life, and render it more cleanly in working. Finally, we may say that we have still the framework left of two more dishes, and we intend to replace the worn-out papier-maché by thick mill-board (not straw-board), which is to have several successive coats of the japan given with sufficient time between each for seasoning and drying.—*British Journal of Photography.*

An Educational Exhibit. The United States Bureau of Education has prepared an interesting exhibit for the St. Louis fair. It will consist of about 2000 photographs, showing every school in each of a large number of typical counties, in various States, representing all sections of the country. Pictures will be taken of the teachers, pupils, rooms, etc., in order to represent graphically the actual school conditions prevailing.

A Discovery. After studying and photographing more than 40,000 pairs of ears of persons, including those of 2000 insane and 800 criminals and those of 300 animals, an English criminologist is forced to conclude that the ear gives clew to personal traits.

PHOTOGRAPHY AT THE ST. LOUIS WORLD'S FAIR.

In comparison with all other Expositions, the World's Fair at St. Louis will be of paramount interest to the photographer, both professional and amateur. It is now recognized that photography is not merely an important mechanical process, but that it has advanced very considerably and has entered the realm of art; so it has been determined that while the main exhibit of photographs at the Universal Exposition of 1904 will be in the Liberal Arts Department, under certain regulations selected pictures will be given a place in the Art Building, under the rules of the Art Department. It is hoped that the photographic fraternity will be more than generous in its co-operation with the exhibition authorities, so that the collection of photographs exhibited will show the present high excellence reached by photography in various departments. The following suggestions are sent by the exhibition authorities:

First. Each society of photographers is requested to select, in such manner as may be deemed best, from photographs offered by its members for exhibit, such pictures as they consider most worthy of a place in a great universal exposition. The pictures so selected, together with such as may be offered by individuals not members of a photographic society, will be submitted to a committee of review and selection.

Second. The following named camera clubs and photographic societies are requested to name one person each as a member of a Committee of Review and Selection, the members so named to be certified by the officers of the respective clubs to the Chief of the Department of Liberal Arts not later than November 1, 1903. The societies to be represented are: The Photographic Association of America; the Photo-Secession of New York; the Photographic Society of Philadelphia; the Society of Amateur Photographers of Chicago, and the Boston Camera Club.

Third. The Committee of Review shall, under the direction of the Chief of the Department of Liberal Arts, carefully examine each photograph offered, dividing them into three grades or classes and one rejected class, the grade to be marked on each picture according to merit.

Fourth. Grade one, or the pictures deemed to be of the highest merit, shall be certified to the Chief of the Department of Liberal Arts, who shall in turn certify them to the Chief of the Department of Art, and under this direction said pictures shall be examined by the National Jury of Selection of the said Department of Art.

Fifth. The pictures so examined by the National Jury of Selection which shall be by them considered worthy of such distinction shall be hung in the Art Building under the rules of the Art Department.

Sixth. Pictures of the first grade not admitted to the Art Palace under the above conditions may be hung in the Photographic Section of the Liberal Arts Palace. In addition to these, there may also be hung pictures of the second grade and as many of the third grade as the space available will permit.

Seventh. Suitable screen walls will be constructed in the Liberal Arts Palace on which pictures may be hung. The special adornment of space allotted to an exhibit must be done by and at the expense of the respective exhibitors in each case.

Eighth. The expense of special requirements for lighting, if such be found necessary, will be prorated among the exhibitors at the established rates.

Ninth. Each picture offered as an exhibit must be the individual work of the exhibitor and should be accompanied by the title of pictures, the name and address of the exhibitor, all but the title being in a sealed envelope so that authorship will remain unknown until after the pictures have been graded by the committee. The outside of the envelope to bear a design or name which shall also be entered on the back of each picture to identify ownership.

Tenth. All pictures offered must be mounted, framed, and matted and all expenses of transportation must be fully prepaid by the exhibitor, and must be shipped at the owner's risk so as to reach St. Louis not earlier than January 1 and not later than January 30, 1904. Shipping labels will be sent upon application.

John A. Ockerson,
Chief, Department of Liberal Arts.

THE ST. LOUIS POLY-PHYSIOG.

HAVE you a poly-physiog, gentle reader, in your studio? If you lack a poly-physiog your equipment is decidedly incomplete. Every studio should have its own poly-physiog. Read, herewith, the story of how the famous Strauss, of St. Louis, made a poly-physiog all unknowingly and how it mystified a newspaperman of that fair city. When you have read about this poly-physiog turn the pages of this issue of the magazine and see for yourself that the veritable poly-physiog is as wonderful as its story. We reprint our account from the St. Louis *Post-Dispatch* and present a reproduction of the poly-physiog itself by the courtesy of its creator.—EDITOR W. P. M.

The most curious book in St. Louis is that in which Photographer Strauss keeps fragments of the photographed faces of his patrons, "for future reference." It is a book without a word of written or printed language, yet it is replete with "speaking likenesses."

Only by a mere accident and acting under the influence of a woman's curiosity am I now in position to tell you about it. This volume—it is an immense one—has been prosaically labelled the *List Book*, but like many other books its name indicates what is not between its stout covers. I've tried to invent a name to describe the contents, and the best I can do is poly-physiog. To render this heathen title understandable it is necessary to explain the process of reasoning which caused me to adopt it. A polyglot, thought I, is a book of many languages; therefore, it is quite proper to call this book of faces—for such it is—thousands upon thousands of faces, a poly-physiog.

Maybe you did not view the exhibition of paintings by Mrs. Newman, displayed at this place, but if you were there you will remember one of the big work-rooms was used for placing wraps. I was among the last to leave on a certain evening, and while looking for a stray glove I noticed an employé of the studio turning the leaves of the book in question. There was revealed to me one of the oddest sights it has been my lot to behold in a long time.

The leaves, fully as large as those of the *Post-Dispatch*, had queer spots on them which at first I was unable to decipher, but gradually the vague impression grew more distinct, and I began to recognize pictures of eyes, mouths, and noses, but seldom the entire face. The young woman using the book noticed my mystified expression and said:

"That's our list book; its one of the secrets of this place, being one of our methods of keeping records of orders. Customers often have many negatives, differing sometimes only in expression, so we paste in a 'list,' or enough of the face to give a clew to the various plates. Here, for instance, is a 'list' of Mr. T——."

Sure enough, I recognized a speaking likeness of the left eye, a portion of the nose and the firmly-set lips of one of St. Louis' foremost bankers.

I was given permission to look over the book, and becoming accustomed to these "sectional views" of well-known faces, I found their study intensely interesting, besides discovering some strange accidental combinations or groupings. I nearly went into hysterics at the sight of two well-known society leaders who hate each other most cordially, looking straight into one another's eyes, each beaming graciously upon the other. On another page, in startling proximity, were the Puritan features of an ascetically inclined West End minister and those of a popular actress of several sensational marital experiences.

Sympathy for poor Will Blank was aroused when, finding his manly face near the coquettish eyes and mouth of pretty Laure Delmar, who was willing to compromise by being his "sister." The contrasts of age were forcibly brought out by the juxtaposition of a dear old lady of ninety years and the cutest baby of as many days. The benign features of one of St. Louis' "grand old men," who has passed to the silent majority, beamed a benediction upon me, and near him the pathetically beautiful face of little Ellen ——, whose untimely death carried sorrow into so many hearts, brought to my mind doubts of the justice of inscrutable wisdom.

Turning a leaf I came upon the "counterfeit presentments" of two men with their heads touching, but "looking both ways for Sunday." They are prominent in St. Louis' official life, and their views on certain phases of civic conditions are quite opposed.

A highly amusing grouping, not placed in close touch, yet on one page, are the faces of Mr. Westbelle (whose divorce case startled fashiondom) and of the mother-in-law who figured in the "documents of evidence," while facing them from the opposite page were his wife's lawyer and his honor of the Circuit Court who officiated at the trial function.

And so on, in endless variety and delightful confusion, are pictures of gallant men and beautiful women; pioneers of St. Louis and its children; merchants and professional men, and hundreds of other distinguished people who have come to our shores on business missions or on social pleasures bent.

Could you but look through this strange volume, this poly-physiog, you would agree in proclaiming it the most curious book in St. Louis.

STRAUSS' SHOP MAXIMS.

FROM the studio of Julius C. Strauss, at St. Louis, there comes all the year round a never-ending stream of good ideas and progressive notions. The latest example to reach our table is a series of "Shop Maxims," five in number, one of which we reproduce above, so that our readers may catch their spirit. These are intended to be posted about the photographer's work-rooms as an incentive to his employés. Modelled after the famous Roycroft mottoes, they are calculated to "touch the spot." The maxims, as received, measure sixteen inches by nine, the legend being printed in blue-black ink upon a brown cover paper of appropriate tint. Each maxim bears a silhouette of the famous J. C. S. and a line etching of some detail of the Strauss studio.

The legends of Maxims I., III., IV., V. (II. being shown above) are as follows:

I. COURTESY TO CUSTOMERS IS A COMMODITY NEVER CHEAPENED BY OVERSUPPLY.

III. EXCUSES ARE THE ENEMIES OF ADVANCEMENT.

IV. POSTPONING DUTIES UNTIL TO-MORROW POSTPONES PROMOTION MUCH LONGER.

V. "I FORGOT" NEVER FATTENS A PAY ENVELOPE.

Since the above was written Mr. Strauss has informed us that he will be pleased to

send a set of his "Shop Maxims" to any photographer who cares to apply for them. This offer is open only as long as the present edition of sets of the "Maxims" will supply the demand. The wise photographer will lose no time in taking advantage of Mr. Strauss' generous offer.

THE RELATIVE EXPOSURE IN STUDIOS AND ROOMS.

BY JOHN A. RANDALL.

In *Photography* of January 24, page 74, I described a graphic method of ascertaining the intensity of the light at different distances from a window, giving also some actinometric tests in support of the conclusions arrived at. Based on this graphic method I have since worked out the exposures required at from one to twelve feet from windows varying in area from sixteen to 144 square feet.

These results are collected in the following table, which shows at a glance the relative exposures:

TABLE I.

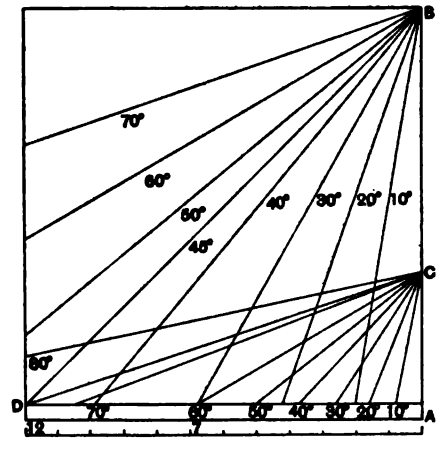
Distance from window in feet.	Area of window in square feet.								
	16	25	36	49	64	81	100	121	144
1 . . .	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0
2 . . .	1.5	1.4	1.3	1.2	1.2	1.2	1.2	1.1	1.1
3 . . .	1.7	1.6	1.5	1.4	1.3	1.3	1.3	1.2	1.1
4 . . .	2.0	1.8	1.6	1.5	1.5	1.4	1.4	1.3	1.2
5 . . .	2.6	2.0	1.8	1.7	1.6	1.5	1.5	1.4	1.3
6 . . .	3.3	2.5	2.0	1.8	1.7	1.6	1.6	1.5	1.4
7 . . .	4.0	3.0	2.4	2.0	1.8	1.7	1.7	1.6	1.5
8 . . .	5.0	3.5	2.8	2.4	2.0	1.8	1.8	1.7	1.6
9 . . .	6.0	4.0	3.2	2.8	2.3	2.0	1.9	1.8	1.7
10 . . .	6.8	5.0	3.6	3.4	2.6	2.2	2.0	1.9	1.8
11 . . .	8.5	6.0	4.0	3.6	2.9	2.4	2.2	2.0	1.9
12 . . .	10.0	6.8	5.0	4.0	3.2	2.6	2.4	2.2	2.0

The figures on the top line indicate the area of the windows in square feet; the first column on the left the distance from the window. Thus the relative exposures from one to twelve feet from a window sixteen square feet will be as 1.2 : 10; from a window 144 square feet area, as 1 : 2.

These figures refer to the light which strikes a surface parallel to the window, and not to that falling along a horizontal plane. The illumination on a sitter placed in the usual position would be of the nature here assumed.

I find that these results may be checked by applying the cosine law. Trotter in his work on *The Distribution and Measurement of Illumination* takes $\cos^3 a$ as applying to cases of illumination such as we are considering, and the cosine values will be found to be correct. A reference to Fig. 1 will show how this law may be

FIG. 1.



applied, the method being a modification of that given in my previous paper. Here AB represents a window twelve feet square, and AC one four feet square. The maximum light at the front of the window is taken as equivalent to unity, and as the object is moved along the base line AD, the intensity of the light at any point is proportionate to the $\cos^3 a$.

The numerical value of $\cos^3 a$ for various angles is as under:

5° = 0.98	25° = 0.81	45° = 0.49	65° = 0.17
10° = 0.96	30° = 0.73	50° = 0.40	70° = 0.11
15° = 0.92	35° = 0.65	55° = 0.32	75° = 0.06
20° = 0.86	40° = 0.57	60° = 0.25	80° = 0.02

Referring to Fig. 1 it is seen that at twelve-feet distance along the base the

angle through the four-feet window is about 70° ; through the twelve-feet window 45° exactly. From the table of the values of $\cos^2 a$ we have 70° equals 0.11, and 45° equals 0.49. The relative intensity of illumination is therefore as 0.11 to 0.49, and the relative exposure as 1 : 4.4.

Practically, the exposure required might be taken as 1 : 5, as the angle is slightly greater than 70°. The table of relative exposures gives as 10 : 2, so that the values of $\cos^2 a$ are in this case identical. Similarly, the remaining values will be given by taking the $\cos^2 a$ of the angle made with the base line ; for example, at seven-feet distance, where the angles of 30° and 60° meet in the point ; by Table I. we have 4 : 1.5 ; by $\cos^2 a$ 0.73 : 0.25, a relative exposure of about 1 : 3 in each case.

So far I have only considered a subject opposite the window, this being the position mostly taken up in practical work. It may happen, however, that some estimate of the light is required when an object is situated on one side of the window. This can also be arrived at by a graphic method and simple calculation.

In Fig. 2 let F, H, G, K represent the four walls of a room, and A, B a window three feet wide and four feet in height, and *a*, *b*, *c*, *d*, *e*, *f* six points, each seven feet distant from the centre of the window ; then the relative intensity of the light at the different points will be proportional to the angular extension which illuminates them.

At *a*, therefore, this point being opposite the centre of the window, the value will be according to the formula

$$\left(\frac{y}{x}\right)^2$$

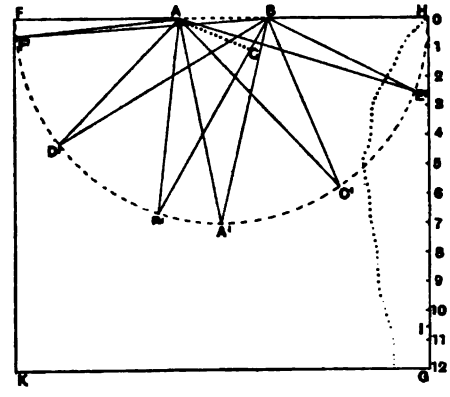
where y equals the aperture and x the distance of *a* from the centre of the window.

Moving round the semicircle, it is obvious, is equivalant to narrowing the window, its height remaining constant. The rate of this decrease can be found by measuring along the dotted line AC at the base of the angle, which gives a value for calculation.

As an object is moved to the side of the window the direct light which illuminates it constantly diminishes, until at a point H, parallel with the window, no direct light is received. Such a point would be quite dark were it not for reflected light, and this reflected light is an important help in the illumination of studios and rooms. The reflected light in a room, however, can be taken as a constant, since it is equally distributed, and affects exposure to the same degree in any part of the room or studio.

To find the relative illumination at the six points the dimensions should be drawn to scale as shown in Fig. 2. In this ex-

FIG. 2.



ample the window is three feet wide by four feet in height, *a* being seven feet distant, and ten feet from *f*. At *a* the numerical value is given by the fraction $\frac{12}{49}$; at *b* the width of the effective aperture, measured along the dotted line AC, is reduced to 2.5 feet, and the fraction is $\frac{10}{49}$, since *b* is seven feet from the centre of the window. Similarly, with the remaining points, the intensity of the illumination being expressed by a fraction having the effective area of the window as numerator, and the distance from the centre as denominator.

Actinometric tests at the various points indicated in Fig. 2 compared as follows with the calculated figures :

	Calculated exposure.	By experiment.
a	1.0	1.0
b	1.2	1.1
c	1.5	1.8
d	2.0	3.0
e	3.0	9.0
f	12.0	18.0
H	Infinite	18.0

This shows that the points *a*, *b*, *c*, and *d* the actual intensity of the light approximates to the calculated results. At *e*, *f*, and H the error is considerable. The light at H is $\frac{1}{18}$ the intensity of that at *a*; but as no direct light reaches H, this represents the reflected light in the room. The same is true of *f*, for the direct light that should reach it is cut off by the brickwork projecting on the outside of the window. With the point *e* the brickwork also reduces the effective aperture 50 per cent., which would account for the falling off of the light. Added to this, the loss of light by reflection from the surface of the glass must become much greater as we approach H. These causes would account for the longer exposure needed at the more oblique positions.

A second series of experiments made when the light was quite uniform gave me a much closer approximation. Here I calculated the intensity of the light at every foot up to twelve along the wall HG, and again at the point *a* as compared with I on the same wall.

I then tested the light at these points, a comparison with calculation resulting as follows:

	Calculated intensity.	By experiment.
1	0.8	0.1
2	1.2	0.1
3	1.6	1.0
4	1.6	1.6
5	1.8	1.8
6	1.6	1.6
7	1 6	1.6
8	1 4	1.3
9	1.4	1 3
10	1.2	1.3
11	1.0	1.0
12	1.0	1.0
a	1.0	1.0
I	4.5	4.1

The same falling off of the light as previously toward H is apparent, otherwise experiment supports the calculated results. The maximum light strikes the wall at five feet from H, and diminishes on either side. The illumination along HG can thus be expressed as a curve, and plotted as shown in Fig. 2.

By this method the illumination in any room or studio could be graphically shown, and would form a guide, not only to the best positions for placing a sitter, but also to the relative exposure at any point. Thus if at *a*, seven feet from the window, the exposure is one second, then at I, thirteen feet distant obliquely, the exposure would be about four seconds.—*Photography*.

THE NEW ENGLAND CONVENTION.

THE seventh annual Convention of the New England Association of Photographers met at Copley Hall, Boston, August 19th to 21st, inclusive, under the leadership of President Morris Burke Parkinson, supported by present and past officers of the Association. The unusual number of manufacturers' and dealers' exhibits, together with the very large pictorial display, made it necessary that the large hall of the building should be devoted to these; and the business sessions of the Convention were, therefore, held in one of the smaller lecture-rooms adjoining the large hall. The attendance of photographers from New York and Pennsylvania, as well as from New England, was this year much in excess of any previous year, and in numbers and activity the Convention was a decided success from start to finish. Its success must be attributed in a large measure to the enthusiastic work done by the Association's officers during the year, the work done by Secretary George M. Bolton and Mr. Charles W. Hearn at the Indianapolis Convention having largely contributed to this widespread interest in the affair.

The first session of the Convention was called to order by President Parkinson about 11 A.M. After a few preliminary words Mr. Parkinson introduced the Hon. A. M. Dolan, of the Common Council of Boston, who made the address of welcome in place of Mayor Collins. In his address Mr. Dolan alluded to the fact that the city of Philadelphia had among its employés an official photographer, whose work consisted largely in making photographs of municipal work in progress. The salary of this official was stated as $1500 per year, and the saving effected by his work on the construction of a filtration plant was about $100,000, which he mentioned as a tribute to the usefulness of photography as applied to civics.

At the conclusion of Mr. Dolan's address Secretary Bolton presented to President Parkinson a silver-mounted gavel as a mark of the esteem in which he was held by the Association, which Mr. Parkinson acknowledged in a graceful speech.

The President then proceeded to appoint several committees to take care of the press, various resolutions, and nominations. This was followed by an address on "Photography in its Relation to Art," by Mr. F. M. Steadman. Mr. Steadman read from manuscript, and his address was well received, after

which the Convention adjourned until the afternoon.

The afternoon session was chiefly taken up by an address on "Art Principles Applied in Photography," with a criticism of some of the exhibition pictures, given by Prof. Beck, of Brooklyn. The fact that Mr. Beck based his talk upon the pictures he had with him makes it impossible to present his address here.

The morning session of the second day was called to order shortly before noon, and President Parkinson first brought before the meeting a proposal looking to the admission of New York photographers to the New England Association. This was discussed by the meeting and laid over for further consideration. When again brought before the Association the matter was ultimately disposed of in a resolution to the effect that the photographers of New York State should first organize themselves, and that after such an organization had been formed, the New England Association would welcome a proposal from the New York organization looking to its amalgamation with the New England Association. After this discussion the Secretary announced that studio demonstrations would be given under nearby skylights, and the greater part of the conventioners then left the hall to participate in these practical demonstrations by prominent photographers, which were keenly appreciated by all who attended them.

At the afternoon session an address was given by Mr. W. D. Hamilton, of the Boston Normal Art School, on "Taste in Composition." In his address Mr. Hamilton urged the prime necessity of the qualities of unity, vivacity, naturalness, and character in portraiture. Taking up another division of picture making, he emphasized the importance of subordination, or the elimination of non-essentials in making pictures, condemning in this portion of his address the prevalent practice of arranging the composition in a figure portrait by the mere trimming of the print. After a few words about the background the lecturer concluded his address by urging the persistent study of pictures by masters and books explaining the masterpieces of painting.

Immediately after the session the conventioners were called to the platform in the main hall by Mr. H. A. Collings, who thereupon presented to Secretary Geo. M. Bolton a bronze statuette in token of his work for the Association and of the appreciation in which he is held by New England photographers. Mr. Bolton made response, and the meeting then adjourned.

The morning session of the Convention's last day was delayed by the inability of the officers to get the photographers into the meeting hall, so great were the combined attractions of the pictorial display and the dealers' exhibits. Eventually a few enthusiasts made their way into the lecture-room, and the session was opened by the reading of the Secretary's report. Mr. Bolton stated in his report that the amount of space which had been sold to the manufacturers and dealers far exceeded previous sales, and that the total of the space receipts would be about $1000. Up to the opening of the Convention, said the Secretary, the Association had received about $200 from photographers as dues.

Treasurer S. M. Holman then addressed the Convention, stating that it was impossible to present a complete report of the standing of the Association in the middle of a convention, but he would assure them that they had a good balance in the treasury, and that the officers would endeavor to spend it in the interests of the Association. Mr. Holman said that up to the moment of speaking the Association had received something like $600 in gate receipts, and that apparently the Convention would end with a balance of perhaps $500 in the treasury. The reports of the Secretary and Treasurer were then informally approved.

The committee appointed on resolutions then reported on various matters of interest. Mr. Chas. W. Hearn, as the chairman of that committee, addressed the meeting first upon the movement inaugurated at Indianapolis for the greater intimacy of State and National Associations. Following this, Mr. Hearn read resolutions on the death of Mr. Edward L. Wilson, of New York, and Mr. F. W. Guerin, of St. Louis. These resolutions, as follows, were separately approved by the Convention:

IN MEMORIAM: EDWARD L. WILSON.

WHEREAS, In view of the loss we, as a body, and photographers generally, have sustained by the death of our friend Edward L. Wilson, Ph.D., and of the still heavier loss sustained by his family and those intimately connected with him in social and business life; therefore, be it

Resolved, That it is but a just tribute to the memory of the departed to say that in regretting his removal from our midst we, the Photographers' Association of New England, mourn for one who was in every way worthy of respect and regard.

Resolved, That in this loss, occasioned by his demise, we, as an association, make our acknowledgment of the great good he has done during his life toward the advancement of our art and for the material benefit of all photographers in safe-guarding their financial interests, as well as for his efforts as the founder of the first photographic association in the country, to the increase of which from that foundation much of the growth of art in photography in America is due.

Resolved, That we condole with the family of the deceased on the dispensation with which it has pleased Divine Providence to afflict them, and commend them for consolation to Him who orders all things for the best, and whose chastisements are meant in mercy.

Resolved, That this heartfelt testimonial of our sympathy and sorrow be forwarded to the family of our departed friend by the Secretary of this Association.

IN MEMORIAM: FITZ W. GUERIN.

WHEREAS, The hand of Divine Providence has removed Fitz W. Guerin from our midst, widely known as one of the leaders in photographic art in America, his work ever being our inspiration, his genial personality having won him friends bounded only by the confines of the country, we who profited by his life and honored his friendship, are desirous of testifying our respect for his memory and sorrow for his loss; therefore, be it

Resolved, That it is a fitting tribute to the memory of our departed friend to say that the Photographers' Association of New England mourns for one who was in every way worthy of our esteem and regard.

Resolved, That we sincerely sympathize with those who were bound to our departed friend by the nearest and dearest ties, that we share with them the hope of a reunion in the better world beyond.

Resolved, That these resolutions in testimony of our sympathy and sorrow be forwarded to his family by the Secretary of this Association.

A third resolution concerned the advisability of holding the New England conventions in each alternate year instead of yearly. This resolution provoked some discussion, but was eventually left in the hands of the Executive Board, with power.

A motion was then made and carried that the previous order making the *Photo Era* the official organ of the Association should be rescinded, and that the *Progressive Photographer*, published by Secretary Bolton, should hereafter be the official organ of the Association.

The election of officers was then taken up, and resulted as follows: President, Mr. Geo. E. Tingley, Mystic, Conn.; First Vice-President, E. G. Merrill, Salem, Mass.; Secretary, Geo. M. Bolton, Rockville, Conn.; Treasurer, S. M. Holman; State Vice-Presidents—for Vermont, A. D. Wyatt, of Brattleboro; for Maine, F. E. Chalmers, of Bangor; for New Hampshire, Mannahan, Hillsboro Bridge; for Rhode Island, T. H. Mills, of Providence. The newly-elected President, Mr. Geo. E. Tingley, made a brief address, thanking the Convention for the honor conferred upon him.

Mr. Felix Raymer, of the Illinois College of Photography, then addressed the meeting on "Development," giving his formulæ and emphasizing the controlling of the color of the negative by means of sulphite as generally practised.

Mr. Geo. M. Bolton then addressed the Convention upon his visit to the National Convention, and spoke of the proposal to bring the National Convention to Boston in 1905, in which event the New England Association would omit its meeting for that year and merge with the National Association. The matter was eventually referred to the Executive Board.

Mr. Pirie MacDonald, of New York, was then called to the platform by the President, and addressed the Convention in his characteristic way. Among many practical points mentioned by Mr. MacDonald, his advice that the number of prints exhibited by photographers at their conventions should be restricted deserves place. "There are a whole lot of you people who have pictures out there—sometimes collections of five or six, and you would have made your reputations more secure if you had sent one and kept the five or six at home. Let every man bring his one—the one you really know is a good thing. This notion of analysis belongs to some people and not to others; but I do believe that if you sit down and analyze the stuff you have made the whole year through, you will 'bring up' on some one picture; and, do you know, from time to time I have felt that I should like to hang my reputation on one picture, and it would have been a good thing to be able to pick out that picture to hang my reputation on. If you go on and pick out your stuff and find the one thing which embodies all the good points of all the rest of them, and then simmer that thing down, you are pretty apt to make better stuff next year than as though you said: 'the whole lot I have made is good.'"

Another very good point was a method of keeping track of sittings ordered from the other sort. We extract from the stenographic report: "A little while ago it occurred to me that there was a loophole in my business; that a certain number of persons had gotten into my place, had had sittings, and, perhaps, had been sufficiently pleased to have ordered if we had crowded them enough, but for some reason they had not ordered. The old notion of the book on which the names were inscribed has always answered the purpose for most people. I know people buried in that book—people for whom I had bought drinks, told stories, and expended effort and one thing and another, but I had lost out because I did not get any money out of them. I devised this scheme: I took a card, and on one side was written the name of the person and the date; on the other side was put down a consecutive number. When the person had had their sitting these cards were put into slots. I had a desk made with a lot of slots. In the first slot were the people who had had sittings and whose proofs had not been delivered; in the next the people whose proofs had been delivered, and in the next the proofs ordered. The result is that to-day it is not necessary for me to go and look over the pile of negatives and try to conjure up how many negatives I am behind; I simply pull out my line of cards, and I know all the stuff that is ordered. When a person has not ordered, his card is in the other slot, and we look there, and call down the camera clerk and say: 'Camera, you took those proofs out; where is the order? He said he liked them. He said he would come in within two weeks. Why hasn't he come in? Take a transcript of that card and send a man out after them." This shows at a glance whether you have all the business that you are able to pull out. The book you have to

look over and over. Another advantage of this little notion of system and analysis is that a person may come in and see you (the ladies will get red in the face now) and the dear girl behind the desk lets them take them out, and she just plain forgets. Five or six months afterward you do not know whether the pictures are paid for or not. That card is in the slot. There is the card, and you know the stuff has gone and whether it was charged or paid for. The goods cannot get out of your house without your having a tab on them. I don't know whether there is anything new in this notion, but it may give you an idea that you can work out if you are sufficiently interested in the system. Anybody who wants to know the details can write to me, asking a question or two, and I will be very glad to help you out. If there are any questions that you have in your mind now, ask me. The system has other advantages. Perhaps there are two persons attending to your books; we will say the proprietor and the dear girl. The proprietor may let the goods go out of the house, and the dear girl does not know that they have gone; a week elapses, and there is absolutely no tracing the thing. You file these cards away consecutively. The month in which they are made, we will say, was January. They run, let us suppose, from 1 to 110. If you have made 100 sittings, that is pretty good. If you have made 110 sittings, they will run straight through; if you have any left, they are in one of those three slots. If the blank represents a card which you have not, of course, there is a pointer for inquiry. But you see you are carrying through an absolutely consecutive record of your business. You are numbering in the year 1903. The first entry, of course, is 031 and 032, etc., and you run through the year in that way. The following year you start 04, and the result is your negatives are all absolutely numbered. If a card is not there, it must be accounted for, and the person who charges put his initials under the charge stamp and the person who accepts cash initials the cash stamp. The result is that you have a check, and there is no opportunity for a customer to be lost once they come into your place and have sittings."

Mr. W. I. Scandlin, of New York, followed Mr. MacDonald with a helpful paper on advertising as a help in photography as a business. Those who read Mr. Scandlin's addresses at the National Convention, printed in our August number, will find therein all that he said at Boston. The suggestions given were warmly received, and many photographers expressed their pleasure in the practical nature of Mr. Scandlin's talk.

The President then called upon members present for short addresses. Among those who responded were Miss Jeanne Bertrand, of Great Barrington, Mass.; Mr. Holman, the Treasurer of the Association, Mr. Felix Raymer, and Mr. Geo. M. Van Norman. At the conclusion of these addresses the President rallied the meeting with a few words, after which the usual votes of thanks to the press and others concerning the work of the Convention were unanimously carried, and the Convention adjourned to meet next year.

THE PICTURES AT BOSTON.

There were too many pictures at the Boston Convention. That was the general complaint. What with the trade exhibits, the business sessions, the demonstrations at outside studios, and the excursions, it would have been a difficult thing to have seen properly a collection of 100 good prints, but the officers of the New England Association, in their desire to interest their visitors, prepared a feast of well over 1500 prints.

This unwieldly display comprised, first, the exhibits of New England photographers; second, a display of foreign photographs especially collected for the New England Association; then came a large selection of prints gathered at Indianapolis by the New England representatives there. Added to this there were collections representing the Interstate exhibits and enterprising manufacturers, such as the Eastman Kodak Co., Rotograph, and the American Aristotype Co. The end of it all was weariness. Necessarily the really good examples of work were very rare and more than usually difficult to find, because of the large number of prints to be viewed. The foreign collection was placed in a room set apart from the general display, and could be viewed with complete pleasure, although it proved disappointing as a collection. Beyond this there did not seem to be any definite scheme of arrangement or separation of the various collections as far as we were able to discover.

It was generally conceded that the best example of work exhibited was an 8 x 10 portrait of a young lady, sent by Mr. Garo, of Boston. We hope to reproduce this portrait in an early number of the MAGAZINE, so that our readers can see it for themselves. A panel entitled "The Prophets," two old men of patriarchial aspect, by Knaffl Bros., of Knoxville, Tenn., was given the second place among all the prints shown. After these two prints, it would be difficult to say which prints were most admired. Mr. Van Norman, of Springfield, Mass., had a clever figure piece in brown carbon, entitled "The Flower Girl," which excited great praise. Stephenson, of Atlanta, Ga., sent a very satisfactory exhibit of six large carbon prints in brown. Schumacher, of Los Angeles, showed a small collection of portraiture in carbon, the subjects being very carefully handled and well carried through. Morrison, of Chicago, had six large portraits *in passe partout*, exhibiting his usual skill in technique, lighting, posing, etc. One of the most interesting exhibits was that sent by Kellmer, of Hazleton, Pa. This exhibit contained a delightful composition of seven bridesmaids very skilfully handled. Pike, of Indianapolis, sent no less than sixteen portraits, handled in an individual style, somewhat resembling the Lytrit portrait, portions of the figure being vignetted off into a white or very

slightly tinted background. Mr. Pike has the skill of a master in this particular branch. Four carefully made portraits were sent by C. J. Van Devanter, of Decatur, Ill. Another interesting collection of good studio portraiture was sent by Whitney & Sons, of Cambridgeport. W. G. C. Kimball, of Concord, N. H., exhibited six portraits in sepia which well sustained his already high reputation as a portraitist. W. F. Core, of Cincinnati, sent a collection of charming pictures of children, closely following the style of child portraiture identified with his brother's fame. The exhibit sent by Mr. Bowersox, of Dayton, O., contained two or three portraits of unusual quality. C. R. Reeves, of Anderson, Ind., exhibited a varied collection of eight portraits, chiefly of children, in which much delicacy of feeling and discriminating work were apparent. The Albany Art Union, of Albany, N. Y., was represented by an exhibit of eight portraits and two views, all of good quality. A collection of views and portraits printed by the Ozotype method, sent by Moreno, of New York, attracted much attention as showing the pictorial possibilities of this artistic method. An unusually satisfactory group, including ten figures, was sent by W. N. Brenner, of Cincinnati. It was one of the best things in this line we have seen. Another gem in Mr. Brenner's collection was a figure portrait of "Orina," in which the play of light was particularly charming. Ray, of Asheville, N. C., sent a large collection of portraits very tastefully framed. Two or three of the prints in this group were altogether admirable in pose and lighting. An exhibit which attracted a great deal of attention was that sent by W. H. Partridge, of Boston, comprising life-size portraits made with the Bergheim lens and exhibiting the peculiar softness of definition and depth for which this lens was designed. Another interesting collection was that sent by S. L. Stein, of Milwaukee. In Mr. Stein's exhibit the panel portrait of a lady near a casement window was particularly admired. Giffin, of Wheeling, W. Va., exhibited five carbons in various tints, showing substantial progress over his work of past years. A few very dainty examples of photography, comprising outdoor scenes, were sent by J. H. Field, of Berlin, Wis., whose picture of "May Morning" was reproduced in our July issue. Mr. Field makes steady progress along pictorial lines, and exercises much taste in the selection and arrangement of his subjects. Holden, of Philadelphia, sent seven prints showing commendable care in composition and the securing of pictorial effect. Goldensky, also of Philadelphia, with praiseworthy repression, showed three sepia platinotypes on Japanese tissue, which by their clever handling and delicate effects did him much honor. We hope to present two pictures from Mr. Goldensky's exhibit in an early issue of the MAGAZINE. A small display of views and portraits made by Mr. Geo. E. Tingley, of Mystic, Conn., secured much attention and admiration by the individuality and feeling with which the various subjects were interpreted. Stiles, of Westerly, R. I., sent seven prints, good portraits, exhibiting much technical skill. Geo. H. Hastings, of Boston, who has again entered the professional field on his own account, exhibited a few portraits of high excellence. Among them was a portrait of a woman remarkable for its soft delicacy and fine feeling. Seven carbon sepias sent by F. R. Barrows, of Boston, were well up to this photographer's high standard, and showed him at his best. Moore, of Albany, N. Y., also sent him an exhibit of carbon portraits which did him great credit. Sperry, of Toledo, was represented by five portraits of children which revealed a combination of pictorial and technical skill beyond our expectations. F. M. Steadman, of Mexico, sent the exhibit of home portraiture (kodak work) which excited so much comment at the National Convention. Mr. Steadman has certainly achieved remarkable results in this special line, and his success should encourage professionals to look into the possibilities more closely.

Among other exhibits noted in passing which space does not permit us to deal with in detail may be mentioned the work of Geo. Edmondson, Cleveland, O.; G. G. Holloway, Terre Haute, Ind.; J. H. Kemp, Scranton, Pa.; Marshall, Arlington, Mass.; Moses & Son, New Orleans; Hoyt, Rochester, N. Y.; Medlar, Spencer, Ia.; Thuss, Louisville; Hurd, Providence, and a remarkably clever portrait of an Arab chief exhibited by C. W. Hearn, of Boston.

The British exhibit, gathered by Mr. H. Snowden Ward, of London, was particularly interesting as comprising examples of work by some of the most notable of British photographers. As a collection it was disappointing in its quality, but here and there were a few portraits of unusual excellence. Among the most prominent exhibits in this collection were those of F. & R. Speight, Furley Lewis, Window & Grove, Fellows Wilson, F. Hollyer, Langfier, H. Walter Barnett, and T. Lee Syms, of Boston. Three large portraits, sent by Joseph Raab, of Brunswick, Germany; among the Raab portraits was a three-quarter length figure of a church dignitary which was generally considered to be the best example of portraiture sent from abroad. Strangely enough, the other examples of portraiture sent by Mr. Raak were altogether unworthy of mention, exhibiting conspicuous faults and defects incomprehensible in one who could produce the portrait already specifically mentioned.

Herr Perscheid, of Leipsic, sent eight carbon prints, comprising figures, portraits, and groups. Although good, we hardly think these prints showed Herr Perscheid at his best.

The exhibits from France comprised some fifty examples of portraiture and landscape with and without figures. Among them were prints from workers of international reputation, but the exhibit as a whole was disappointing, although it included many ambitious compositions. A notable feature in the French work was the care taken in almost every instance to

secure the charm of atmosphere or the proper envelopment of the subject. Speaking generally, the foreign work exhibited great variety in color and in the choice of the printing method employed, whereas the American exhibits were for the larger part printed in browns or other sombre tints.

A very satisfactory little collection included in the foreign exhibit comprised four portraits by Mrs. C. H. de Gonzales, of Sonora, Mexico. This lady makes steady progress in her portrait work, and her exhibit this year was wholly pleasing. Another collection which left a satisfactory impression was that representing some six photographers of Belgium, secured by Mr. Beguin, of Namur. The Belgian exhibits were apparently almost wholly the work of amateurs, and comprised figure pieces and outdoor studies.

EDITOR'S TABLE.

THE "One-man Method" of photography, practised by MILTON WAIDE, of 164 Fifth Ave., New York, particulars of which were given in our July number, republished in the *British Journal of Photography*, has awakened considerable interest among photographers everywhere. As the simplest means of answering many communications received on this subject, we would again inform our readers that Mr. WAIDE has published at $1 a little book, giving a clear explanation of his methods of working and the "One-man" system. This book has been warmly commended by many prominent photographers, among them Mr. G. W. PACH, of PACH BROS., and Mr. GEO. ROCKWOOD, of New York City. Mr. H. A. LYMAN, of Stevens' Point, Wis., writing to Mr. WAIDE, says: "I find your book worth many times its price for information and formulæ for artificial light printing alone." Mr. W. I. SCANDLIN says: "It should be read by everyone from cover to cover." Mr. GEO. G. HOLLOWAY, Secretary of the P. A. of A., says that he recommends the book with pleasure. Mr. R. G. PETERS, of Brooklyn, says: "I am following the system you taught me six months ago, and nothing could induce me to go back to the old way. The quality of my work is far better, the prices are higher, I have no waste, business is increased threefold, and I have more time to myself. The book is worth hundreds of dollars to the professional, and is a fine thing for the amateur." With these indorsements the practical photographer can hardly afford to deprive himself of the information given in Mr. WAIDE'S treatise.

A LOAN exhibition, comprising selected examples of portraiture from twenty-five prominent American studios, was held at the studio of PRIEST & TUTTLE, Geneva, N. Y., October 15th, 16th, and 17th. By this tasteful manner of drawing attention to the artistic possibilities of photography Messrs. PRIEST & TUTTLE made a step of decided advantage to themselves as well as to photography in general. If such exhibitions were given in every town we should not hear complaints of poor business and bad prices. Educate your public to know and appreciate good photography, and you will find it ready to respond both in volume of business and prices.

ONE of the most interesting exhibits at the National and New England Conventions was the Pingree Electric Flash-light Machine, which was demonstrated daily by Mr. PINGREE in person. In capable hands the Pingree machine does wonderful work, and we can highly commend it to photographers looking for a practical flash-light machine. Mr. PINGREE has prepared a singularly profitable booklet about his machine, which contains *fac-simile* letters from Messrs. S. L. STEIN, J. C. STRAUSS, E. J. DAVISON, and F. A. REINHARDT. Copies of this booklet can be obtained on application to Mr. PINGREE.

THE new developer Edinol, put out by the BAYER concern, has been an exception to many recent developers, in that it has quickly won popularity with the professional worker. Many of the largest houses in the country are now using it in their daily work, and the reports of its behavior are very satisfactory. Those of our readers who desire to give Edinol a practical test can obtain it in quarter and half-ounce packages for their convenience. The BAYER people have recently introduced another interesting product in Bayer's Ruby Varnish. This has many uses: for backing plates to prevent halation, coating electric bulbs, dark-room windows, and dark-room lamps. It can also be used for blocking out negatives and similar purposes. Our readers should put themselves in touch with the BAYER house, so as to receive from time to time their announcements of specialties and novelties as put on the market.

REV. H. F. SWARTZ, whose interesting paper on "Measuring the Density of Negatives" appears on another page, tells us that he has just secured patents for a dark-room lantern burning either oil, gas, or electricity, and employing a fluid filter automatically cooled by draft. The lamp is said to emit from 25 to 100 times as much light as is afforded by other lanterns, and with perfect safety. It is further claimed that the temperature with this lamp does not rise above a degree easily borne by the hand. The appearance of the Swartz lamp on the market will doubtless be awaited with much interest by workers who have to deal with color-sensitive plates.

AT the suggestion of many photographers at the National Convention, Mr. F. DUNDAS TODD, of the *Photo-Beacon*, has undertaken the conduct of an "Employment Bureau for Photographers," to supply "Help Wanted," and to advise concerning "Positions Offered." Our correspondence with photographers on this perplexing subject tells us that Mr. TODD has taken up a work of great utility. We urge our readers to get full particulars from Mr. TODD and to make his Bureau a work of national usefulness.

SLOWLY but surely the leading galleries of the country are pinning their faith to carbon portraiture for their very highest grade work. A carbon portrait not only represents the highest product in photography, but brings the highest prices, and by its wonderful qualities and permanency brings the largest amount of honor to the studio from which it is sent out. Photographers who are using carbon tissue or thinking of taking up the carbon process should send to G. GENNERT, 24 East 13th St., New York, for particulars of the Elliott Carbon Tissue. The Elliott tissues have a high reputation among European photographers, and Mr. GENNERT is the sole agent for its sale in this country.

THE PHOTOGRAPHERS' ASSOCIATION OF CALIFORNIA.—On the 19th of May the photographers of San Francisco and Oakland met and organized the Photographers' Association of California. At that meeting there gathered the largest number of photographers ever assembled in that State, and the Association has been a success from the beginning. The membership is steadily growing, and includes every photographer of standing in the two cities.

The Association will hold its first Convention October 29th, 30th, and 31st. It is expected that the majority of the photographers of the Pacific coast will attend the Convention and enroll themselves upon the membership list. The meetings will be held in the Mechanics' Pavilion, which offers ample space for the art exhibits as well as to the manufacturers and dealers. A souvenir catalogue is to be published in the form of an annual, containing articles by prominent photographers. We are told that this annual will be altogether different from the souvenirs usually issued by State Associations. The officers of the Association are as follows: President, F. A. Webster, Oakland; Vice-President, M. M. Morrison; Secretary, D. F. Mullenden, 121 Post St.; Treasurer, H. G. Vaughan (all of San Francisco), with F. G. Schumacher, of Los Angeles, as Special Director. The Convention Committee are Messrs. O. H. Boye, H. W. Oliver, Louis Thors, Will Lussier, I. W. Taber, E. L. Bowman, and L. T. Terkelson (all of San Francisco). This is a strong board and promises well for the first year of the new Association. We welcome the new organization as a very desirable and much-needed help to photographers of the Pacific coast. Those of our readers who have not already enrolled themselves as members of the California Association should take time by the forelock and enjoy its advantages and benefits from the beginning.

A copy of the Constitution and By-Laws, with a list of the members, can be had on application to the Secretary.

WE record with great pleasure the act that our friend Mr. ARTHUR EDWARD JOHNSTONE, of New York, a photographer skilled in many different branches of his profession, was awarded on July 4th the gold medal offered by the Rhode Island Society of the Cincinnati for a suitable tune to be sung to the words of Smith's national anthem, "My Country, 'tis of Thee," intended to replace the air of "God Save the King," generally used until to-day. This honor came to Mr. JOHNSTONE in a national competition which brought some five hundred and odd manuscripts to the committee appointed as judges in the matter. It should be a detail of considerable pride to our readers to know that this signal distinction has been achieved by an American photographer.

THE Illinois College of Photography has enjoyed an unusually active season. Among recent visitors were Mr. W. S. LIVELY and Mr. MACFADDEN, President and ex-President respectively of the Kentucky and Tennessee Association; Mr. R. OVERTON, a former student, who is now official photographer of the D., L. & W. R. R.; Mr. GEO. G. HOLLOWAY, Secretary of the P. A. of A.; Mr. FRANK V. CHAMBERS, editor of *The Camera*, and Mr. BELLSMITH.

Profs. BISSELL and RAYMER, with several others from the College, attended the Convention at Indianapolis, and received quite an ovation from the large number of former students in attendance at the meetings.

FORTY-TWO YEARS IN PHOTOGRAPHY.—Among the oldest subscribers to this magazine we honor the veteran Mr. A. B. STEBBINS, of Canisteo, N. Y., who this year celebrates his forty-second year behind the camera. The subjoined clipping from a local newspaper gives some details of Mr. STEBBINS' career, and will doubtless interest many of our older readers:

"Mr. STEBBINS was born in Alleghany City, Pa., and is a son of B. P. STEBBINS, who was one of the pioneers of the lower oil regions of Western Pennsylvania. Mrs. S. L. STEBBINS, his mother, learned photography in 1859, and opened a studio in Pleasantville; afterward in Titusville and Corry. Mr. A. B. STEBBINS was brought up in the photograph galleries

of his mother, his brothers and sisters also learning the profession. He first remembers cleaning plates, etc., at the age of ten; later, sensitizing plates and albumen paper, making the nitrate of silver required direct from the coin of the realm, dissolving gold dollars for his toning baths, and many other processes incident to the old wet-plate days He commenced business for himself at Osceola, Pa., about 1874; later was at Blossburg and Tioga, Pa. In 1879 he settled at Canisteo, where he has been since. In 1900 he erected the building on Main Street known as the Stebbins Block. On the first floor he has a fine reception-room, where many rare productions of his skill are on exhibition; above is the operating-room and other apartments used in the business. The entire gallery is well arranged to secure the best artistic and mechanical results. Mr. STEBBINS does all kinds of photographic work, including enlargements in oil and water colors, outside views, interiors, flash-light work, and commercial photography. He is a member of the National Photographic Association and an expert in the matter of lighting, posing, and finishing. His pictures are beautiful portraits and are in wide demand in the town and surrounding country.

THE EASTMAN KODAK CO. ask us to announce that they have completed arrangements with KODAK, LTD., of London, whereby their American customers will be allowed to compete in the three photographic competitions recently inaugurated by the English company. Four hundred and four cash prizes, amounting in value to £1000 ($5000), are offered. We hope that there will be such a representation of American work in this competition as will be a credit in quality and quantity to American photographers. A circular of information can be obtained from the EASTMAN KODAK CO., Rochester, N. Y.

FLASH-LIGHTS WITHOUT SMOKE.—The PROSCH MANUFACTURING CO., of New York, announces a new departure in flash-light photography in a device for disposing of the smoke. This company has been experimenting for many years along these lines, and has established its priority of discovery in this and all other countries of the idea of eliminating the smoke from flash-light work. It has at last perfected its devices and has covered them thoroughly with patents, so that by the time the flash-light season opens the numerous professional photographers who have needed something of this sort so long will be able to use the new method originated by the PROSCH CO.

THE three delightful studies of a child, reproduced in this issue, come to us from the studio of Mr. W. D. BALL, of Missoula, Mont. As examples of child portraiture they are as creditable to the photographer as anything of the sort we have reproduced of late, and we congratulate our faraway brother on the quality of his work, which is an honor to his profession and State. The originals are platinotypes, carefully printed and tastefully mounted. Such work would do credit to the best galleries of our largest cities.

A LETTER just received from Mr. C. F. STAMPER, Boise, Idaho, tells us that the recent Convention of the Photographers' Association of the Pacific Northwest was a most successful meeting and had the largest and most profitable exhibit of any of the conventions of this Association. These conventions are invaluable helps to photographers to do better work and get better prices, and we rejoice to hear that our friends in the Northwest do not neglect their opportunities. The committee appointed to select work to be sent for exhibition at the St. Louis World's Fair chose two prints from Mr. STAMPER'S exhibit at the Convention. Mr. STAMPER was also elected State Vice-President for Idaho.

WE have received from the G. CRAMER DRY PLATE CO. the following formula for the tank development of Cramer plates:

Stock Solution.

Water	32 ounces.
Carbonate of Soda (dry)	2 "
Sulphite of Soda (dry) according to desired color of negative	1 to 1½ "
Bromide of Ammonium	30 grains.
Citric Acid	30 "
Hydrochinon	1 drachm.
Glycin	2 drachms.
Metol	2 "
Pyro	2 "

Dissolve the chemicals in the given rotation.

To preserve the stock solution we recommend filling the same into small bottles of the exact size, to hold enough for making the diluted solution for the tank. The bottles should be quite full and tightly corked. For use take:

Water	120 ounces.
Stock Solution	6 "

The developer should be used fresh, and its temperature kept between 60° and 65° F. until development is completed. Immediately on immersing a plate in the tank solution move the plate up and down with a quick motion to prevent streaks and air-bells.

PORTRAIT

By the Garo Studio, Boston

The original, a sepia platinum 8½ x 12½, was acknowledged to be the best example of portraiture exhibited at the Boston Convention, 1903

WILSON'S PHOTOGRAPHIC MAGAZINE.

FOUNDED BY EDWARD L. WILSON.
L. W. WILSON, EDITOR.

VOL. XL. NOVEMBER, 1903. No. 563.

STUDIO ADVERTISING.

BY W. I. SCANDLIN.

III. The January Opportunity.

Prompted by one motive or another, the average adult, if left to his or her own sweet will, can be depended upon to use a certain limited number of photographs each year without any particular prodding or stimulating in the way of direct advertising.

The work that was turned out for Mrs. A., B., or C. last season, or the photographs of the young politician or business man that created a spasmodic interest among his friends just before election, may always be counted upon to bring a small amount of business to the photographer who made them. The bulk of this business will probably have been placed by the time this article comes under the eye of the reader, and the average photographer will feel that he is doing a fine business when he foots up the sales of the two months immediately preceding the Christmas holidays. It should be remembered, however, that the holiday trade does not represent a fair average of the year's business. It is due to a special condition, and may fairly be said to represent the high-water mark of all the combined advertising the photographer may have done during the previous twelve months. It is the fruit of all his publicity methods; his paid advertising; his show case displays, and all the indirect methods he may have employed to keep his name and fame before the people of his community; in fact, the sum total of his activity as a business man and an artist.

The natural tendency of business after the holiday season is to show a marked falling off from the record of the previous months. This tendency should be taken in hand at once if the corrective is to be applied. The falling off should be prevented before it occurs rather than remedied afterward, and any method which will effect this is good advertising.

The work of the holiday season should have produced an unusual number of choice specimens, and should include a greater or lesser number of subjects in which the general public will have more or less interest. The photographer should not fail to take advantage of any and every opportunity to make use of such subjects.

It is, of course, impossible to publish them broadcast; but in most cases a very creditable display of them could be made on the walls of the studio, and an exhibition of such work should attract a great deal of attention and comment if properly carried out.

Let the photographer, so soon as the rush of holiday printing is over, make a representative collection of the best work —including, of course, the most prominent people—that his studio has produced

during, say, the past six months. Make a very careful set of prints on the paper and in the style that is best adapted to each particular subject, and arrange a display which includes only these subjects, running his exhibition through a period of several days or possibly weeks.

Let him see to it that the display is noticed in all the local society papers, and as widely advertised as possible by word of mouth and by local reading notices in the press. Invitations should be sent to every one whose portrait is included in the collection and to as many more prominent and influential people in the town as can be reached by personally addressed mail matter. The invitations for such an exhibition need not be expensive, but they should be neat and in perfect taste.

There will be no better opportunity during the year for the selection of material than will come at this particular time, and probably no better opportunity in the printing-room to carry out this project. The expense will be inconsiderable, and the result will justify every dollar expended.

Another publicity plan that offers peculiar advantages at this particular season is the mailing to a selected list of names of a neat calendar for the coming year, bearing distinctly upon photography and its claims upon the public support. Such calendars may be found in stock designs, or may be prepared at trifling cost in such a manner as to be attractive in every way. The principal value of such a mode of advertising as this lies in the fact that the calendar is in practical use throughout the entire year, and will be more apt to be kept where it comes daily under the eye of the family than almost any other method of advertising that can be named.

The importance of keeping alive the business which has been active during the holiday season is self-evident, and it only comes to be a question of the method to be adopted. Unless something definite is undertaken in this direction, we must content ourselves with such business as may come from the efforts of the past, and repeat the experience of last year and the year before, with their cycles of dull times and occasional spurts of better business, with their alluring but unreliable prospects of increasing prosperity. These prospects are only to be realized by persistent effort and a definite policy steadfastly carried out, by which the idea of PHOTOGRAPHS, PHOTOGRAPHS, PHOTOGRAPHS is driven home into the innermost consciousness of every intelligent being in the community.

There is much in the doctrine of suggestion, and the merchant whose wares are constantly brought before the attention of his buying public is steadily developing by suggestion a demand for his goods. By putting new thoughts into the minds of those who read his announcements he creates a new interest and presents the qualities of his goods in a new light. He strikes a variety of keys which find response in the different personalities to whom he appeals. With every presentation of the subject in a new light he fastens in the mind of his reader a new thought concerning the desirability of his goods, and it is in the accumulation of new points of view, new ideas of attractiveness or value that a desire grows for their possession.

So may it be with the photographic studio, and so must it be with the progressive and successful one. By changing the nature of his attack from time to time, by phrasing his announcements in different language with each public statement that he makes; by carefully bringing his name and business before the public under various guises and in various connections, but always with the ring of something newsy and interesting, he establishes himself in a stronghold of popular favor from which he unconsciously dominates the public will. An influence that is almost hypnotic attaches to many of our successful advertisers who, by the very nature of their advertising, create business through suggestion.

It is business of this sort that the photographer wants; the new business that has lain dormant because of lack of stimulus. The people in a community who are most likely to respond to this stimulus of suggestion will be found in the well-to-do class with money to pay for their fads and fancies.

If this be true, as the writer believes it is, the field can be worked to advantage. It should be worked at once and persistently if the tide is to be kept from ebbing.

ART IN PHOTOGRAPHIC PORTRAITURE.

An Address before the Boston Convention.

BY OTTO WALTER BECK.

THE relation of photography to art is a subject of vital interest, and not to the photographer only, for advancement in the intellectual life of the nation depends in part upon the solution of this problem. Art itself will languish until photography is absorbed into it and shares its life.

The words art and photography are sometimes mistakenly used synonymously. Art expresses through representation what is highest, noblest, maturest in us. The material of such representation is not so much what we see as what we feel and imagine. Photography is representation in that it reflects what is before the camera; not unlike a mirror, it gives certain literal truths. This means of representation is the result of a scientific discovery. In photography, representation is attained by methods that are pure science. At present the majority of photographers are loyal to "good straight photography." Such men are not artists, but skilful men of science. The confusion of the art photography problem arises because of this difference in representation.

When a master artist builds up a picture his first thoughts are not occupied with the imitation of an object or person, but with the expression of an idea. The purer his art, the more that idea is one of arrangement and of balance, and when he has finished his work, every one who sees it is filled with the beauty he has attained. Literal, naked, fragmentary representation is never his aim. Art is too subtle to be used for such cheap purposes.

Always, when we look at a work of art, we feel the soul of the artist through his work. The scene, or the object itself, for its own sake, shares a lesser interest. In "good straight photography" these characterizations are absent. When viewing a photograph do we (the public) feel impressed with the maker of the print? No, because the photograph expresses nothing; it only records certain limited facts. Before such a photograph our mind is analytical; it dissects the representations in sections, for every "good straight photograph" is but a fragment of nature, and, therefore, does not rise above still-life.

A photographic likeness shares this still-life quality. A photograph gives but the least possible personality of the man who handles the tools, while a picture reveals the whole man—his knowledge, his training, his art.

The camera is a most unmanageable instrument when used to express ideas, beauty, or a rounded conception. The devotees of good straight photography can do skilful scientific work; they can get their instrument to mirror surface forms, but they cannot express anything further.

Photography has in recent years, however, shown itself to be a tool, that, in the hands of men who "feel pictures," and, better still, in the hands of men to whom picture-making is not a mystery, can be made to "express" a great deal.

The manipulated photograph is beginning to show us its possibilities, its beauty, and its power in the upbuilding of a photo-picture.

These years in which we witness the fermenting of the art idea in the ranks of the professional worker can be called the era in which photography is "undergoing transformation into art." The tide is strong. Nothing can stem its force. The secret of its power lies in this: that methods are known by which the technique of photography can be enriched and the work changed from imitation into creation. The word "creation" is significant. It means to ten thousand professional photographers that the art school days have begun for them. It signifies that their work is to become a measure of their ability, marked by their knowledge, stamped by their talent and training—a product sought and bought like the work of the painter, the sculptor, the poet. The twentieth century will close with this prediction verified. Its first days awaken with the discovery of the processes; the immediate future will be taken up with serious art study by photographers,

and all the future will be given to development.

The work of a teacher of art in any of our art academies has as its main object the handing down to the young the laws and traditions that have been received from the masters. Pictorial art, though ever changing in aspect, never departs from laws that are fundamental. It may be said that pictorial art has branches, such, for instance, as wall-decoration as distinct from easel pictures. Both branches follow certain laws to be acquainted with which is necessary before we can hope to do intelligent and satisfactory work, no matter how much we are gifted.

When an art teacher is requested to give instruction to photographers he is baffled —actually helpless—because of the technique peculiar to photography. Not until the art teacher has worked in photography and has shared the trials and tribulations of the professional camera-portraitist, can he cope with the problem. Experience in the operating-room, dark-room, and the office explains the photographer's past restrictions, his hesitations, his conservatism. Experience in this practical work with the best photographers also gives the trained artist the clue as to why photographers have nor exploited their material. They do not know what they want pictorially. Their lack of training has left picture-making a mystery, and they cannot invent; therefore, they cannot fully exploit their chemicals and tools. The fault lies not with the individual photographer, as not only individuals, but whole bodies are earnest seekers after enlightment in art. The development of photography from sciences, the trade influences, the slow maturing of pliable processes, and the unfortunate education of the public to literalism by the photographer account for the present state of things. To-day, however, the fruit is ripe, and those who want the treasure will pluck it. They will grapple with the problems peculiar to art.

The basis of art is "construction." It is because photo-portraiture is without that element that it strikes all who see it as fragmentary. I have heard the words uttered from this platform that "art cannot be taught," and I have been assured by a member here that art instruction will not make an artist. Surely art cannot be taught to one who is not interested, but turn to history, and learn that all the old masters have had severe training; that all modern men prominent in the art world have sought art centres and the best instructions procurable. Only photographers have been held exempt from a like necessity, and what have they sought as a substitute? The answer can be expressed in one word—"recipe"—short cuts by means of which unlimited numbers of prints can be safely made upon a given pattern. But art is creation, and every picture you do should stand as an individual work, complete in itself, having its own life, emitting a beauty shared by nothing else. A picture, like a person, should be marked by individuality.

The camera stands for truth, yet it may be a truth without beauty or logic, because without "selection." Ah, there is the point: the people want art. They want your thought along lines apart from your lighting, pose, exposure; or, at least, they want evidences of other thoughts and feelings than those just mentioned. The mind of the trained artist is incomprehensible to the layman. It sees the upbuilding of a picture through elements hidden to the uninitiated. The artist thinks in a manner different from anyone else. With the exception of the handful of manipulating photographers, no one in the profession has learned to think in art. If art were sentiment, photographers would frequently attain to abundant expression; if art were story-telling, photographers would make pictures in unprecedented numbers; if art were the telling of literal truths, photographers would be greater in their work than the men who have been the flower of civilization. But art is none of these. To be an artist you must learn to "think in arrangement."

I have here before me a number of photographs that were given to me for dissection from an art point of view. They represent the A No. 1 work done in straight photography. These prints hardly rise above the likeness, because they lack art. They cannot claim the term portraiture, for they are without construction from a picture point of view. Each is without balance; in each our eye is offended by the presence

or the absence of factors necessary to bring about an intellect satisfying ensemble.

You may be prompted to the question, Is this lack of picture construction in the pose? No disquietude need arise concerning the pose of a sitter. Any pose that is characteristic of the person portrayed can be used. It merely furnishes lines with which the art-trained mind works and builds up the harmonious picture. Lectures on posing postpone the solution of the art problem.

Is it the lighting that does the harm? There are few pictures here where lighting could not be made effective, and many kinds of lighting are represented here. Some photographs have rather inky shadows in the eye sockets, and some lights make chalky flesh, textureless linens and dress materials. But all this is not a real hindrance, for even with these shortcomings balance is possible in the photographic processes.

Is it because you have not sufficiently engaged your model in conversation to animate him and cause a pleasing expression? This is always a factor, of course, but not one that interferes with the attainment of an impressive picture, for beyond expression, lighting, and pose, there is the kind of thought not yet revealed to the maker of the good straight photograph.

Art will find its entrance into photography through the making of a background that is more or less consistent with the figure. No photographer is satisfied with his background. His views upon lighting may be ironclad, but the backgrounds give him no permanent ease of mind. Here we touch the weakest spot—the disease on the surface. The ready-made background is a device tumbling into disuse. It is doomed to go. What is to take its place? For the present the plain dark light or half-tone backgrounds replace the painted scenic ones, and the advantage is felt by all. One step more is necessary, and we have the beginning of art. These plain backgrounds will be used as the artist uses his light or gray canvas. Tone and line invading them will be employed to echo the needs of the figure, and then we shall have harmony, sense, a creative work, a growing art capable of expressing the inventive genius of the worker.

But who without training understands the needs of the figure? The first requirement in a portrait is to direct the eyes of the observer to the face of the one portrayed in the print, and to hold the attention there unhindered. Nothing introduced should be allowed to interfere with that one object. Here is where we meet with the need of knowledge of construction, of training, without which we shall fall short of our object. Your simple black, white, or half-tone background is sure to protrude and become a veritable foreground, making your figure accidental and incidental.

It will be quite a long time before photographers will use lines intelligently. Tone will be employed successfully much earlier, because it is not a forceful means of expression. Many people naturally feel tone, and readily employ it to good effect. Invention, in its great and glorious exercise, will come slowly to photographers, but it will come, for the methods are known and the workers are working.

There is one other factor entering in when we wish to harmonize the background with the figure, and that is arrangement for beauty. Beauty in nature is found; beauty in art is created, and grows out of laws.

Our normal pupils at Pratt Institute learn to understand these laws and to create beauty in many branches of art. In no less a degree is the art education of the photographer one of the realities to be met with in the onward march of events. Straight photography will undergo transformation; additional treatment will be acknowledged legitimate. With art study thus begun, the endless resources of the tool will be exploited.

ONE of the commonest defects of large portrait heads is faulty retouching. The sharpness of individual lines, especially when they are scratches to represent black eyelashes, is often irritating. Coat the back of the plate with ground-glass varnish, and do the retouching on that.

THE glossy streaks which are made on the surface of bromide paper by careless handling can be removed by lightly sponging the surface with a wad of cotton dipped in wood alcohol.

PRINTING PHOTOGRAPHS UPON TEXTILE FABRICS,

BY A. J. JARMAN.

PRODUCING photographs upon textile fabrics such as cambrics, fine linen, and silk is a branch of photography practised only by the few, because the best formulæ for such work have been kept secret and the prices charged have been exceedingly high, especially when the production has been made upon silk. Moderate charges for this class of work would bring considerable custom to any photographer who would make such work a part of his business. Some photographers have abandoned fabric printing because of the defective formulæ, the results being satisfactory only when applied to landscape and marine views, while portraits have lacked the necessary half-tone necessary for an artistic production.

Some years ago preparations were made for the production of photographs upon fabrics of various kinds by the platinum process. This process dropped into disuse because of the uncertainty as to the depth of printing, this being entirely of the guesswork kind, so that when the result was unsatisfactory the piece of silk or other material became so much waste and loss.

The process to be described is one which can be watched at the time of printing, the correct depth being observed before removal from the printing frame. The half-tones are perfectly rendered, and the toning of the print may be carried out in any gold-toning bath, without any further preparation than the preliminary coating and sensitizing. One point of importance to be attended to in this class of work is extreme cleanliness in every operation. If the fabric is new and contains any sizing or stiffening, it must be washed out by rinsing in hot water, wrung out and dried.

It is advisable in this class of work to have two porcelain trays, kept especially for the purpose—one for the preliminary sizing and salting, the other for the sensitizing. It is also advisable that the toning solutions should be made up about twenty-four hours before use, a richer color and uniformity being thereby attained. In the preparation of the various solutions distilled water only should be used, as common water usually contains many impurities, especially dissolved organic matter, which, if used as a solvent, is sure to give variable results. Developers of all kinds must not be allowed to come into contact with any kind of fabric that has been sensitized or during the operation of sensitizing, as spots and marks which cannot be erased will be produced through contact with the free nitrate of silver. If it is found necessary to stretch the fabric out flat, it must be laid upon a clean sheet of glass—not upon board, and not upon metal under any circumstances.

Having everything ready, make up the following solutions:

No. 1.—	Sodium Chloride (common salt)	100 grains.
	Ammonium Chloride	25 "
	Magnesium Lactate	125 "
	Distilled Water	25 ounces.
	Gelatine (hard)	125 grains.

Allow the gelatine to soak for half an hour. Warm the solution so that the gelatine dissolves completely; soak the fabric in the above for a few minutes; then suspend to dry.

The sensitizing solutions are made as follows:

No. 2.—	Nitrate of Silver	120 grains.
	Distilled Water	4 ounces.
No. 3.—	Citric Acid	50 grains.
	White Sugar	50 "
	Distilled Water	20 ounces.

The dried salted fabric may now be placed in the sensitizing solution and allowed to soak for two or three minutes. Then withdraw the fabric, drain until it is surface dry in the dark-room or under yellow light. As soon as it is dry, draw it carefully through solution No. 3 and hang it to dry. When dry it is ready for printing.

Linen, silk, or cambric may all be prepared at the same time with the same solutions. There is no need to fear contaminations. After sensitizing, the prepared fabric will not keep for more than one week. It must be kept under pressure in a printing frame away from the air. It is a better plan to print as soon as sensitized

and dry. In practice it will be found to assist the work considerably to sensitize a strip of silk, linen, etc., so that a small piece may be used as a test upon the negative to be printed from. This will enable the photographer to judge the time necessary to produce a perfect print, which should be about two shades deeper than the finished print. An ordinary printing frame is all that is necessary, and, having made the test, a portrait can be printed by time.

When the print is made, all that is necessary is to wash it in several changes of water and proceed to tone exactly the same as for a paper print. A very good toning bath for this class of work is the borax bath made as follows:

Saturated Solution of Borax	3 ounces.
Water	30 "
Chloride of Gold	2 grains.

As soon as the toning is complete, wash the article in two changes of water, and fix in a solution of hyposulphite of soda (2 ounces of hyposulphite to 20 ounces of water).

The fixing is usually accomplished in about ten minutes. All that is necessary now is to wash the fabric in a dozen changes of clean, cold water, then suspend with clean clips to dry.

To flatten the fabric out so as to give a smooth and even surface it may be ironed out upon a clean cloth, but the iron must not be too hot. The final result will prove to be a highly satisfactory production, the half-tones being perfectly rendered. Excellent portraits can be made by this means upon every kind of linen and silk, on the corners of pocket handkerchiefs, for the silk facings of cushions or as a portrait for framing.

If the material is very thin, the salting solution must be made 50 per cent. stronger. For articles of every other kind, the formulæ given will answer every purpose.

TONING BROMIDE PRINTS WITH THE HYPO-ALUM BATH.*

BY DR. LEO BAEKELAND.

THOSE who have used this form of toning bath know that if a solution of alum be added to a solution of hypo, the two salts act on each other, and the visible result is the formation of a milk-white liquid. At a very low temperature the mixture may remain clear for some time, but an insoluble product will appear afterward, according to the condition of concentration and temperature of the solution. The process is an excellent example of a very slow chemical reaction. At ordinary temperatures, if this liquid mixture is left to itself, it will keep on precipitating for months in succession. In some experiments I filtered the liquid after ten weeks' standing, and obtained in this way a very clear liquid; yet after another week it had again turned slightly milky, showing that the final result of the reaction was not attained.

The reaction can be hastened considerably by heating the mixture. The precipitate obtained in this way is composed of aluminium hydrate and sulphur. The analytical results of the same have been given by Detaille as follows:

Water	34.00
Alumina	28.00
Sulphur	38.00
	100.00

My own experiments have shown me that the composition of this precipitate will vary according to temperature, and also according to the time which has elapsed after the mixture was made. The precipitate which forms first contains more alumina and less sulphur than the one which deposits later, which is mainly composed of sulphur. By dissolving two parts of alum and ten parts of hypo in fifty

* Summary of a paper read by Dr. Baekeland before the Congress of Applied Chemistry at Berlin, republished from Photography. Dr. Baekeland is well known to American photographers as the inventor of Velox, and is a photographic chemist of repute. His paper is especially valuable as dealing with the method of toning bromide prints generally used by American photographers and as pointing out the cause of defects often encountered in the use of this method.—EDITOR W. P. M.

parts of water at ordinary temperature, and by collecting the deposits, after one week, drying it at 212° F. until constant weight, I found the following percentage composition:

Water	22.20
Alumina	17.42
Sulphur	60.38

Six weeks later the new precipitate analyzed gave:

Water	3.68
Alumina	0.96
Sulphur	95.36

The toning action of this mixture can be looked upon as a process of slow sulphurization under the influence of nascent sulphur. This action is easily shown by putting into the liquid a polished silver plate. The color of its surface will slowly change to yellow, then brown, then purplish brown, and finally black. On the other hand, if a mixture of hypo and alum has been submitted to a thorough boiling and then filtered, it will have no further action on silver, which shows conclusively that the effect is due to liberated sulphur.

Mixtures of hypo and alum act in a different way on different kinds of silver prints. The silver image produced by development on a bromide or a chloride paper is in an entirely different chemical condition from the so-called silver image in a printing-out paper. If we examine a bromide print under the microscope, we find that it is composed of a multitude of little silver particles, distinct in shape, and of measurable size. If we examine under the same magnifying power the image of a printing-out paper, we fail to see such silver particles. The whole image seems to appear more as a homogeneous transparent mass. There are good reasons for believing that in a printing-out paper the so-called silver image is nothing more than a darkened organic silver compound, containing more or less of the silver haloids.

Whether the solution of hypo resolves these compounds into other ones soluble in this chemical and leaves a pure metallic silver image is a question the discussion of which does not enter within the scope of this article. It may be that the image, which is left after a printing-out paper has been treated with a fixing bath without toning, is either composed of complex organic haloid silver compounds, or of silver in some allotropic state, characterized by chemical instability or a tendency to enter into action with various other chemicals.

In a printing-out paper the so-called silver image has so little resisting power that the combined action of water and air will affect it. Thus, as is well known, such silver prints are acted upon by water and bleach out if left too long in the washing tank. By sulphurization such an image is made still less resisting, and more liable to further alteration or fading.

It is quite possible that the sulphurized image of a printing-out paper is not pure silver sulphide, but an organic sulphur compound of silver, more apt to change than pure silver sulphide would be under the same conditions. In fact, we know that silver sulphide stands the action of ordinary chemical agents relatively well.

With developing papers the action of the hypo-alum bath varies considerably according to the particular nature of the silver deposit. For instance, such prints as are made with "quick" bromide emulsions, which have generally coarse particles of silver, tone very slowly, and with much difficulty. "Slower" emulsions, on the contrary, give prints in which the grain of silver is smaller, prints which can be toned much easier. The size of the silver granulation of which the image is formed has a direct influence on the ease of toning. The smaller the particles, the quicker sulphurization will proceed.

All gaslight developing papers, of which the basis is silver chloride, give images which tone in hypo-alum, and this much quicker and easier than bromide papers. Here again we can attribute this fact to the finely divided condition of silver in the image in these prints.

In any of these papers, when well prepared, the size of the silver chloride particles is much smaller than that in silver bromide emulsions. During the whole process of manufacture of these chloride emulsions the production of larger particles of silver chloride is systematically avoided, and the most successful of this class of papers contains a considerable quantity of silver chloride in an unprecipitated state,

which I might call colloidal silver chloride. The natural result is that the developer precipitates the silver in extremely small particles.

With developing papers of this class it is possible, by properly increasing the time of printing and restraining the developer so as to bring out the image very slowly, to obtain an image which, instead of having the ordinary black color of precipitated silver, shows an entirely different range of tones, varying from the brightest yellow or red to a beautiful blue purple. These brightly colored developed prints are very unstable. They can be fixed in hypo, but will undergo profound changes under the action of almost any chemical agent. That is the reason why they tone so easily in hypo-alum toning baths. When a bromide print has been overexposed and is developed with a weak developer, or one containing much restrainer, the resulting prints, instead of having a blue or gray-black appearance, have a decided greenish tone. Such greenish-looking prints also tone much easier in hypo-alum than if they had been obtained in the normal way.

ON THE QUESTION OF PERMANENCE

it may be said emphatically that, basing ourselves on practical experience and theoretical considerations, *printing-out papers* toned with hypo-alum or any other sulphur toning mixture only possess very fleeting images. With bromide prints, on the contrary, with their dense deposits of relatively large particles of silver, the danger of fading is very remote. Here the transformation into compact and chemically inert silver sulphide seems to be complete; and such sulphur-toned bromide prints have kept unchanged, under adverse conditions, for periods extending over ten years. Whether such prints will keep indefinitely is a question which cannot be answered positively, except by future experience. With papers of the Velox class, the results depend greatly on the conditions under which they are made. My experience shows that sulphur-toned prints, obtained after restrained development, so as to obtain warm tones, may give beautiful results, but such prints will fade afterward. Velox prints, which were developed under normal conditions, with a strong developer so as to produce metallic silver in the black and stable condition and sulphur toned afterward, have given more permanent results. Some such prints, which I have had in my possession for six years, have not yet changed, but it is doubtful whether they will keep as well as sulphur-toned bromide prints.

It would be wrong, however, to generalize much on these questions. The permanence of any print produced by any chemical process will always depend to a large extent on the way the process is carried out. Furthermore, the density of the deposit, which makes the strength of the print, plays a large part in the question of the future permanence of the print for the same reason that a thick coat of paint will withstand atmospheric influences better than a thin one.

THE PRACTICAL WAY OF USING THE HYPO-ALUM BATH.

It may be used either directly after the prints are taken out of the fixing bath or any time thereafter. It can be applied to prints which have been dried for some months. The strength of the bath may vary according to particular conditions, but the following will answer the purpose:

Water	10 ounces.
Hypo	2 "
Alum	200 grains.

It is preferable to use lukewarm water. The hypo is added to the water first, and then the alum, while stirring, until everything is dissolved. This will give a milk-white liquid, which should be used as it is without filtering. The bath should stand for one or two days, as fresh baths do not work well; it must be strengthened from time to time by adding new. An old bath should not be thrown away entirely, but replenished with new in the manner stated above. The quickest results are obtained by preparing the bath as hot as the gelatine film will stand, say from 130° to 140° F. In this bath bromide prints will tone in less than thirty minutes, and prints of the Velox class much quicker. A cold bath will also tone, although very slowly, and the process may then take several days. The best results I ever saw were obtained by toning slowly in a bath at about 90° F.

In some large bromide print plants a special room is used for this purpose, so that its temperature can he kept about 90° F. and the prints are left in the toning dish for one or two days.

Until a new hypo-alum bath has been used several times it has a marked tendency to bleach the prints and to dissolve the half-tones. It is a known fact also, that as soon as the hypo-alum bath contains a certain amount of dissolved silver it works better. This is the reason why new baths are improved by leaving waste prints in them. The same result can be obtained by adding some drops of silver nitrate solution. The addition of a small quantity of some lead salt acts in the same way. But both metals, and especially lead, may prove very detrimental to the whites of the prints.

THE DANGER OF OVERWORKED TONING BATHS.

Carefully conducted tests have shown me that as soon as too large a proportion of silver accumulates in the hypo-alum solution, any prints which go through such a solution absorb into the gelatine of their film a certain amount of what I might call "retained silver," which it is impossible to remove afterward, even by two days continuous washing in water. By the term "retained silver" I refer to an unknown insoluble compound which is uniformly distributed through the gelatine film, in the whites, as well as the blacks of the image, and which is produced under these conditions. It is entirely independent of and distinct from the metallic silver in the silver image. I cannot decide whether the double silver and sodium thiosulphate has anything to do with the matter, or whether we have to deal here with a case of so-called solid solution, much in the same way that certain soluble dyes are fixed and retained in certain organic fibres, and thus become insoluble. One of the peculiarities of "retained silver" is that neither washing nor extra fixing in fresh hypo will remove it.

Any "retained silver" may be easily detected after the print is washed and dried, by touching the surface of the film with a drop of ammonium sulphide on the white portion of the image. If any "retained silver" is present, instant darkening will occur wherever the ammonium sulphide has touched the surface. This darkness gives us a hint as to the liability of future changes in the print, because the same effect will be produced in time on the entire surface of the print, after it has been exposed long enough to the action of the sulphur compound always present in the atmosphere.

"Retained silver" has an extremely sweet taste, which, after a few seconds, becomes very disagreeable when large quantities of it are present. This last peculiar taste is very different from the taste of sodium thiosulphate.

THE STUDY OF ACTINISM.*

BY F. M. STEADMAN.

In portraiture, more than anything else, are the painter and photographer able to come together as artist and artist. He who has most absorbed the principles of artistic construction and is most a man in his sympathy with his subject will surely win here.

Painters have too long told photographers that their process merely makes transcriptions of nature. For the benefit of the discussion let us assume that it is in a sense true, Then do they mean by that that nature is a fixed thing that can only be transcribed just as it happens to be at any certain moment? Is there no knowledge of artistic construction necessary in the placing of a figure? Suppose that a sculptor's finished work should rise before him to an upright position with the arms hanging by its sides, and should say to its maker "Place me again in the attitude in which you made me," would not the

* A portion of Mr. Steadman's address at the Boston Convention.

sculptor require the same knowledge of artistic construction to do that thing as he required first to cut it from the stone? But another fact is also true. Given a form ready made, the novice could begin to educate himself in the beauty of composition by placing that form in different positions and relations, with greater success than he could by taking the stone and chisel first.

For this reason the sculptor and the painter study by the drawn line and from the human figure. And since the photographer must do his complete constructing both as to composition and lighting on the model itself in front of the lens, he certainly must needs know and have the power to utilize the principles of artistic construction to as great an extent as his fellow worker in oil or marble. And any branch or study that will instil those principles in the mind of one will do the same for all.

But when the photographer has all the knowledge that the painter possesses, he still is far from ready to make pictures by his own method. Had it not been so, the painter would have been ready to use photography at its first discovery, and his complete incapacity to use that process is a matter of history. They tried and utterly failed, and consequently decided that photography was a mere process without anything in it to appeal to the artist.

The fact is that there was a certain truth of nature which the artist did not know that kept him from utilizing the photographic process. Photography reproduces in black and white, and a wholesale condemnation of it carries along a like condemnation of all the etchings and other works in black and white that have made men famous.

That thing that the painters did not know is to this day practically unused in the study and practice of photography only in an experimental way. It is that lack of knowledge that has confined the professional photographer to his "skylight," and has kept the world from approaching the photographic process as a simple science and reducing it to the state of an obedient servant. This thing is actinism.

This leads to the consideration of the subject from the standpoint of the broad dissemination of art knowledge.

Color is purely sensual, and very little concerning it can be taught by rule. It cannot, therefore, ever become a basis of scientific education. The truths of anatomy are so far separated from the pure act of vision, and are so truly established in the field of the anatomist, and furthermore are so entirely negligent in such a large part of the artist's work that it is clearly a minor, although a very important, factor in art education. Perspective has done more to make art intelligible than any other one thing. Still, no scientific study could be based upon it for the purpose of general education. The study of the line in drawing is really the basis and foundation of art education.

The natural value of actinism is not observable by the sense of man, and is, therefore, not sensual in its nature; not being sensual, the intelligence is required to comprehend it, and the mind's eye only can see it. It is continually playing between all surfaces in nature. It is the force, one characteristic of which, the rate of vibration, is written in colors upon our sense of sight.

By my method of measurement and unification, the sense of sight becomes unable [able? Editor W. P. M.] to distinguish the colors from each other at an actinic value of 1-750,000th of an actino. (One actino of surface intensity is such as will bring solio paper to a just plainly observable tint in thirty-two seconds.) The brightest thing that the eye can adjust itself to is a brightly lighted cloud which has a value of 4096 actinos. The eye can distinguish colors then through a scale of actinic values, one extreme of which is over three billions of times the value of the other.

At the same time, and with the iris, therefore, at the same opening, the eye can distinguish colors through an actinic contrast of 1 to over 65,000. Supposing that a photographic exposure to the highest of those values would require one second with a certain diaphragm, then the lower of those values would require eighteen hours under the same conditions to effect the emulsion to the same extent. Still, the eye can distinguish color in all those values at the same glance, but is absolutely blind to the truth of actinism as a whole. Still, we try to battle on with the question of

photographic exposure as though the human eye was a tape-measure or scale. Our eyes were evolved for a higher purpose than to become a yardstick for us to measure with.

Second, it is one of the chemicals in the laboratory of the photographic artisan—and no photographic worker can hope to escape the truth that so far as the chemical process of photography is concerned he is an artisan, pure and simple.

In fact, photography was purely of the artisan until a few artists were developed who proved to us that it was also something more.

As a basis for art study, actinism has not been recognized, but we may nearly all see the day when it will be accepted at its proper importance. We have not, even as photographers, recognized it. While we measure formulæ we guess at actinism. We build large studios with skylights because we need aid in guessing at it, yet we will not measure it. We have stayed away from the home with our professional work because we were unable to cope with nature's laws and make a good picture by the common window. Yet we have denied actinism a hearing—when its consideration is the only door that can free us from the restrictions which now surround us.

We have seen our helper with two months' experience go out and start business and cut our prices in two, when, if the truth of actinism were taught in the common schools, his efforts would have been ridiculed; and we ourselves must go up above the process into the realm of art if we escape the doom that is sure to fall on all middle class and poor workmen in our business when actinism shall be taught in the common schools and art schools. In those days the bungler in the art will not molest us, but will hunt the anti-spirits of civilization as tricksters do, or depend on the wholly incredulous for his support.

What we have been looking and working for as photographers is the separation of the good from the bad—to reach that level where good portraits will demand good prices regardless of who lives and works around the corner. And it is only since the advent and spread of amateur photography that we have artists who use the process of photography and who get from $5 to $50 for a single print—when in the dark days of competition, a few years back, we were glad to get a dollar a dozen for cabinets.

It is education that draws down the knife of discrimination, and as professional photographers we have only to be found on the right side of the knife after it is drawn.

The higher use of actinism will lead us into a greater appreciation of the beauties of nature; it is apart from photography. It will include as a study the consideration of a scheme of education as intelligible and as scientific as that studied by Mozart, Mendelssohn, and Wagner.

In consideration of art education, how is it that we have ever come to that point where we have looked suspiciously at scientific education—which is nothing more than intelligible truth?

Go again to music. Whom do you respect most, Beethoven or Paganini? As a purely natural artist Paganini is so far ahead as to defy comparison, but we have little respect for him, simply because in the natural logic of our minds we feel that the man who has developed himself by mental application to the means at hand deserves more respect than the man whom nature cast in a mould at a single pouring.

In Omaha, Nebraska, a few years ago, I heard four hundred school children in a single chorus sing a programme of beautiful songs, including a number of selections from the masters. They sang in parts, and beautifully. They knew the scale, and could tell you much of music—and their confidence was built on knowledge. There were more children in that four hundred who could compose an acceptable melody than there were painters in all Omaha who could paint acceptable portraits.

Now the truth of actinism when studied and mastered enables us to embody in black and white the principles of artistic construction by seeing with the mind's eye or the educated sense that truth of actinism on the surfaces of nature and applying it to the model before the lens. We have form in nature; we learn to utilize that form and to compare by selection of position, relation, etc. We have active gradations in nature, and we learn to construct tone values in the photograph by the construction of actinic values on the natural

surfaces and planes before the lens; or we learn to paint with actinism on the model as a painter paints with colors on his canvas.

By the study of actinism we are forced to go straight down to nature and see with the intelligence truths that the sense of sight cannot reveal. There is not an existing element to-day in art education that could not be more beautifully learned by studying it in relation to this truth.

I desire to divide sharply the consideration of actinism into two parts. Actinism is two distinct things, or in time will be so considered. First, it will be the basis of the study of art for the cultivation of the mind of the student. Second, the study of space and surfaces and a single system of mathematics for the problems of its own intensity.

The practice of photography, however, will, I believe, always accompany the study of actinism, as it is such a beautiful proof of its truth, and in itself, by reason of its results, so gratifying.

VIGNETTING OF PLATINOTYPE PRINTS.

THE ordinary crude forms of vignetting, as practised by the less skilful worker, in imitation of the effects produced by the professional photographer, have, not entirely without cause, fallen into disfavor. Professional vignettes, though not perhaps in the highest walk of art, have yet the beauty of perfect manipulation, and the amateur who desires to emulate these *chef-d'œuvres* must adopt the same methods and cultivate the necessary skill. We shall have occasion to deal with these methods some other time; our object at present is to call attention to the less-known process of vignetting on platinotype paper by means of glycerine, which offers opportunities for the display of individual taste and talent.

The *rationale* of the process depends upon the fact that the salts with which the paper is coated are insoluble in glycerine, which may be brushed freely over the paper without disturbing in any way the image that has been printed upon it, but not as yet developed. The developing solution may then be painted over the image with a brush, with the result that wherever it touches, the exposed salts are reduced to the metallic stage and the image appears in black. The action is much slower than when the paper is floated in the ordinary way upon the developing bath, and gives the worker time to select the portions that he wishes to show, and to avoid those that are better suppressed. It is also in his power, by diluting the developer with the glycerine, to modify the depth of color in the image, from the palest shade of gray to a full black, if the exposure has been sufficient.

From this it will be seen that the class of work is eminently suited to those who have had some training in draughtsmanship and who possess command over the brush. Fair results may be achieved by those who are less skilful, but the full measure of success must ever be with the craftsman. Printing is carried out in the ordinary straightforward way; given a negative showing suitable gradation, no masking is required. The print, as it is taken from the printing frame, is laid upon a sheet of glass, and the glycerine is applied evenly over the whole of the surface. A fairly stiff brush may be employed, as the glycerine must thoroughly be in contact.

Two or three cups filled with a plain solution of potassium oxalate of the standard strength in one case, and of oxalate and glycerine in varying strengths in the others, are required, together with a few brushes of different sizes. As the object is to produce a print in which the principal objects are fully developed, while subsidiary objects are lightly sketched in, much as would be the case in a pencil sketch or charcoal drawing, the worker must select those parts which he desires to be in full black and to paint them over with the undiluted oxalate solution. Wherever the solution is applied, there will the image in time acquire the full strength to which it has been printed. Where the image is to be faint, a very dilute mixture of the oxalate must be applied, the dilution

being, of course, with the glycerine. These parts would also in time develop fully out, but as the action is slower the skilled draughtsman will have little trouble in varying the depth of the tint according to his taste. The brushwork may be in any style; either niggling, in which case a line drawing effect is produced, or in broad, strong washes resembling a charcoal drawing, or a wash in Indian ink. As the image grows in strength it must be closely watched, and at the critical moment plunged into a dish of dilute hydrochloric acid, in which the action is checked, those parts which were untouched by the brush remaining white. Even a skilled artist will find that his early efforts leave much to be desired, the conditions of working being very different from those he has been accustomed to; and, although the action is not hurried, there are not the same opportunities for consideration as in the more leisurely work of applying washes of color. The process is a most fascinating one, and, although decision and skill in using the brush are necessary, no actual skill in drawing is wanted, as, of course, the negative provides all detail. The power of suppression, which is just that most lacking in the ordinary photographic processes, is bestowed upon the worker, and the ability to make use of it with promptness is the bent of mind required,—*Photographic Chat.*

CONCERNING OZOTYPE.*

BY ERNEST MARRIAGE.

WITH the approach of autumn the choice of a printing medium is a matter of interest, and consequently a few remarks upon one of the more recent introductions of the ozotype process may be useful to intending exhibitors. One of the first conditions applicable to this class of work is that the photographs shall be permanent; apart from the disgrace to the producer of exhibiting an evidently deteriorating print, the purchaser of an exhibited photograph is entitled to that extent of consideration. The choice lies between carbon, using the term in its widest sense, and platinotype prints. For those who, with limited time, want prints from numerous negatives, the simplest way is to make platinotypes; but there is not much choice in color, even assuming the permanency of the tints that are produced by modifying the developer or subsequent toning. The carbon process offers the widest range not only of color, but also of surface, and the extra trouble involved in making a few prints for a special purpose is not a serious consideration.

Ozotype is one of the modifications of the carbon process, but it has some advantages that have led me to adopt it in preference to working by the single or double transfer process, which has long been familiar. Sensitive carbon tissue must be bought in quantity, say six or twelve pieces of one tint at a time, and will not keep without special care; the alternative plan of stocking various insensitive tissues and sensitizing, as required, is troublesome, and, in my experience, is rather uncertain. But it is an easy matter to keep a stock of plasters, or insensitive carbon tissue, in various tints for the ozotype prints; the color can be chosen after the print is made. Ozotypes are no more difficult to make than single transfer carbon prints, and the process has one great advantage over most others, that the contrast can be increased or diminished at will. Its drawbacks as compared with carbon are slight loss in sharpness and a narrower choice of suitable papers on which to print. It is a mistake to suppose that the loss of detail is necessarily great. An ozotype on smooth paper can be made to compare favorably with a platinotype on a rougher grade paper, though I think that a platinotype on smooth paper would be a trifle sharper than an ozotype, and be more suitable for small negatives where detail is of importance, as, for example, in the case of architecture. It is practicable to vary

* Supplies for Ozotype printing are obtainable in America from Geo. Murphy, Inc., New York.

the sharpness of an ozotype to a slight extent, as will be shown later; this may be useful in some cases—at any rate it is a power gained.

Sensitizing the paper is simple; generally I have done this myself, though I have used ready sensitized paper with equal success.

Single carbon transfer paper with a smooth surface gives the best detail, and is easy to work; though this is a thoroughly sized paper it is better to use some diluted fish glue with the ozotype solution—twenty minims of the former to every drachm of the latter will suffice. Gum arabic may be substituted for fish glue, but it has a softening effect on detail. After coating with a brush, leave the paper to dry for a minute or two, then go over it lightly with a pad of butter muslin.

Smooth paper is easier to work; the beginner will be well advised not to try drawing papers.

A diffused light is best for printing, the paper is about as sensitive to light as platinotype; under a good negative the exposure, mid-day in the summer, takes about ten minutes. A mixed lot of prints made recently received from seven to thirty minutes' exposure.

The visible image is sufficient guide in printing, the highest lights should be apparently unaffected, so that after the next step in the process, the washing, they appear quite white.

The next operation, pigmenting the prints, may be done immediately after the prints are washed, or they may be left to dry, when they can be dealt with at leisure. I prefer to let them dry, but it is purely a matter of convenience. The prints should be surface dried between blotting-paper to get rid of any standing drops which would make the print dry unevenly and result in markings. Prints in this state may be kept a fair length of time. I have kept them a few weeks without any apparent harm.

With regard to pigmenting the print, I think that the rather frequent changes in the published formulæ for the acid bath are to be deplored. In preference to the bath given in "Instructions in Ozotype," I strongly recommend adherence to the following formulæ:

1. For prints from negatives with strong contrast:

Glacial Acetic Acid . . .	30 minims.
Hydroquinone	20 grains.
Water, to make . . .	40 ounces.

2. For prints from fairly plucky negatives; those that will give good platinotype prints:

Glacial Acetic Acid . . .	50 minims.
Hydroquinone	20 grains.
Water, to make . . .	40 ounces.

3. For prints from weak negatives:

Glacial Acetic Acid . . .	80 minims.
Hydroquinone	20 grains.

To produce plucky prints from very weak negatives metol is preferable to hydroquinone.

4. Will give a splendid plucky print from a weak negative:

Glacial Acetic Acid . . .	50 minims.
Metol	15 grains.

These formulæ are practically those given last fall in *The Amateur Photographer* by Mr. Manly. Increase of the acetic acid increases contrast in the prints. If a batch of prints with marked variations in contrast are to be pigmented at the same time, it is well to sort them out into three classes—strong, moderate, and weak. Pigment the strong prints in bath 1, then add twenty minims glacial acetic acid, and use this for the prints with moderate contrasts; afterward add thirty minims more acid, and finish up with the weak prints. Blue or green plasters require a bath rather stronger in acetic acid than other pigments, and the prints may be printed more deeply without harm.

I have tried the hydrochloric acid and ferrous sulphate bath, but prints so treated, which would have given good results with acetic acid and hydroquinone, turned out absolute failures, exhibiting a tendency to reversal. A friend of mine, who is well up in the making of ozotypes, failed for some reason or other to get satisfactory prints with sulphuric acid and ferrous sulphate. On the other hand, both he and I have found the hydroquinone bath uniform in its action.

There is no need to describe the pigmenting process here *in extenso*. A slab of plate glass is the best thing for squeegee-

ing operations. The damp paper adheres to whatever surface is used, but is easily removed if one corner is turned up; a piece of celluloid cut film is useful for this; the unaided fingers are likely to separate the plaster from the print. Prints on rough paper may advantageously be put into warm water 110° to 120°, and transferred from that to the acid bath when the plaster is ready to be removed with them; this tends to lessen the danger of air-bubbles, and consequent white specks. Prints should not be left long in warm water, or they will be reduced in strength. The pigmented prints are placed one on top of the other between blotting-boards or paper with a weight on them, left so for two hours, then separated and left to dry naturally. I generally develop prints the day after pigmenting, but they may be left for a few days if it is more convenient.

Prints should be dried (and then soaked thoroughly) before development if the utmost sharpness is desired. Prints from strong negatives may be developed forty-five minutes after pigmenting; the detail will not be quite as good as if the print had been dried, but the difference is not very great, so slight, in fact, that a half-tone block would not make a distinction. Another plan to get softness is to add glycerine to the acid bath, four drachms to the forty ounces.

The actual development differs but little from that of carbon. Ozotypes are, however, more tender to handle, a touch that would not affect the former might spoil the latter completely.

Overexposed prints, if they can be stripped at all, will generally come around after prolonged soaking.—*The Amateur Photographer.*

NOTES.

How to Photograph a Yacht. The best position for the camera in relation to the yacht must be left to the judgment of the operator. A broadside view, or direct bow or stern, will not (writes "Half Tone" in the *Daily Express*) as a rule make a pleasing picture.

What might be termed a three-quarter view will make the most pictorial photograph. Under ordinary circumstances, especially in bright weather, the white sails are rendered in almost the same tone gradation as the clouds. It is well, if possible, to secure some contrast, in order that the sail shall stand out against the sky in the print. The greatest contrasts will be obtained by having the sun at the back of the sails or in front of them.

The position the boat occupies in the print is important. Unless at anchor, the boat should not occupy the centre, and on no account should the position cause the cutting of the bowsprit, mizzen, or any part of the boat.

The whole of the sails, rigging, spars, etc., should be included in the composition. This requires much care; but no picture of a yacht is worth taking unless it is complete.

A very quick exposure will give a hard, unnatural, and lifeless appearance; a slower exposure will give the effect of motion and energy. The spray breaking over the bows will give life and action to the picture.

Starch for Mounting Photographs. Professional photographers use any good sample of starch; but a special brand of Glenfield starch is sold for the purpose. As the paste will not keep in good condition for more than twelve hours or so, it must be made fresh each day as required. A sufficient quantity of the dry starch is placed in a bowl, and rubbed up with cold water till free from lumps. Boiling water is then poured on; the water must be boiling. As the liquid is stirred it will presently thicken, by reason of the minute globules breaking and setting free the colloid substance. It is then set on one side to cool, and the skin which forms stripped off. It should be quite thick—the consistency of a table jelly or blanc-mange. If the water is not sufficiently hot, the grains do not burst, and then it is necessary to boil the paste. Some persons add gum and sugar to make it more adhesive; but if properly made, these are unnecessary complications.

By Geo. Habernicht, San Francisco

By Geo. Habernicht, San Francisco

By C. A. Krauch, Pasadena, Cal.

By C. A. Krauch, Pasadena, Cal.

By Gertrude Käsebier, New York

By C. Durand Chapman, Newark, N. J.

THE CHILDREN'S CONGRESS

By Jas. H. Reed, New Bedford, Mass.

By G. S. North, South Norwalk, Conn.

PHOTOGRAPHS ON PORCELAIN BY DIRECT PRINTING, WITHOUT THE USE OF COLLODION.

BY A. J. JARMAN.

THE production of photographs upon porcelain or opal glass was first introduced, in 1864, by the late G. Wharton Simpson, who produced a collodion emulsion of great sensitiveness, which could be used either upon porcelain plates, with a matt or smooth surface, or upon paper. Unfortunately, the prints produced by this process were fugitive; perfect toning and fixing did not add to their permanency, whether the surface of the plate had been ground or used in a smooth state.

It is possible and practicable for anyone to produce printing-out plates of good quality without the use of collodion at all, either as an emulsion or as a substratum. A suitable combination of the organic salts of silver for the production of prints on porcelain or opal glass will be found in the formulæ hereinafter given, which produces an emulsion that has good keeping qualities and a high degree of sensitiveness.

A very important point requiring attention is the cleanliness of the plate previous to coating. Any stain whatever upon the surface at the time of coating the plate with emulsion will present itself in an intensified form in the finished picture. Every trace of grease must be entirely removed, and the fingers must not be allowed to touch the surface to be coated, because the saline matters, together with the trace of oil, contained in the perspiration of the hands and fingers will show up when the print is finished. All that is necessary is to exercise ordinary care.

Procure a number of cut opal plates, both ground and smooth, known as pot opal, not flashed, the pot opal being solid white all through. These plates must be cleaned as follows:

Make up a solution of common washing soda in hot water, half a pound of soda to a gallon of water. After wiping off any dust or trace of the grinding material which may have been left upon the plates, lay them one on top of the other in the hot soda solution. Prepare a mop by tying a piece of clean rag on the end of a clean piece of flat wood. Take a plate by the left hand, rest one end upon the vessel containing the soda solution, and rub well all over both sides with the mop until it is seen that the plate is thoroughly clean. It may then be placed in a tray of clean water, and the operation repeated until all the plates have been cleaned. If there should be one or two plates with streaks or marks which cannot be removed by this operation, it will be necessary to have at hand a small quantity of fine pumice powder. Dip a piece of wet rag into the pumice and rub well over the plate. It will be found that almost any stain will yield to this treatment.

Now prepare the following solution in a separate tray:

Muriatic Acid (common) . .	4 ounces.
Water	40 "

Take the plates from the wash water, lay them in this acid bath for a few minutes, and rinse them one by one in a stream of running water. Drain and place in a clean rack to dry. When dry, pack them face to face and away from dust, as they are now ready for coating.

It will be necessary to prepare a levelling slab, which may be of slate, glass, or marble. Arrange this slab upon a table, and level by means of a spirit level, using a few wooden wedges for adjustment. This slab should be kept as cold as possible. In winter the temperature will be sufficiently low; in hot weather it will be necessary to rub the slab over with a block of ice to cool it, wiping it afterward with a clean, non-fibrous towel whenever it is required for use.

The following emulsion should now be prepared:

Gelatine (hard)	2 ounces.
Distilled Water	5 "

Allow the gelatine to soak in the water for one hour, and get the following solutions ready to hand:

1.

Chloride of Ammonium . .	40 grains.
Distilled Water	1 ounce.

2.

Rochelle Salts	50 grains.
Distilled Water	1 ounce.

3.

Nitrate of Silver . . .	254 grains.
Citric Acid (powdered) . .	48 "
Distilled Water	5 ounces.

4.

White Alum (powdered) . .	90 grains.
Distilled Water. . . .	2 ounces.

When the gelatine has soaked, place the stoneware jar or crock containing it into a saucepan of hot water, and bring it up to boiling-point. Stir the melted gelatine well with a clean strip of glass; add the chloride of ammonium solution, stir; then add the Rochelle salts. The graduates which contained these solutions may be rinsed with a small quantity of distilled water, this being added to the hot gelatine. The vessel containing this mixture must now be removed and taken into a room illuminated either by yellow light or by a gas-jet, but not under a white light of any kind.

As soon as the temperature has lowered to about 125° F., the solution of nitrate of silver and citric acid may be added gently, stirring vigorously all the time. The alum solution should be made hot and stirred into the gelatine mixture. Ten drops of stronger ammonia may now be added, and the emulsion well stirred, the last addition being two ounces of pure alcohol (wood alcohol or columbia spirit must not be used).

The emulsion being now prepared, it must be placed aside to set in a very cool place, an ice-box, if possible, for twelve hours. At the end of this time remove the emulsion, now in the form of a block of stiff jelly, cut it into pieces with a bone knife or a piece of clean wood shaped like a knife, and squeeze it through a piece of coarse canvas, allowing the shreds to drop into a crock of clean water containing a few pieces of ice.

When the whole of the emulsion has been squeezed into the water it will readily subside. Pour off the water by covering the crock with the piece of coarse canvas, drain a short time; then repeat the operation twice more, meantime stirring the shredded emulsion well. This washing process is to rid the emulsion of all the soluble salts. After the third washing and draining the emulsion is ready to be remelted and used.

Take half of the washed emulsion, melt it in a clean stoneware pitcher by placing the pitcher into boiling water. When thoroughly melted and very hot, add to each pint one drachm of a solution of nitrate of silver, sixty grains to the ounce. Stir well, then add one ounce of pure alcohol; stir and filter through clean cheesecloth and absorbent cotton, or through absorbent cotton alone, if a funnel is employed having a bulb at the top end of the stem. The emulsion is now ready for use.

Have the plates at hand, the levelled slab cooled off, and a four-ounce graduate filled with the filtered emulsion. Take a plate by the top left-hand corner, pour a pool of emulsion in the centre, tilt the plate so that it runs first near the thumb and finger which hold the plate. Then allow it to run to each of the other corners. Drain the excess of emulsion into the graduate so that no air-bubbles are formed. Retilt the plate so as to even up the film, and place it upon the cold slab to set. As soon as a number of plates have been so coated, place them in a clean rack back to back, with one small space between, leaving a double space between face and face of the other plates. Place these racks in a ventilated drying closet or in an ordinary darkened room. It will be found that the plates will be dry in the course of twelve hours. As soon as they are dry they may be stored in packages face to face, ready for use.

Any emulsion left over must be reserved in a small covered crock in an ice-box, but should be used up within two weeks.

Printing may be carried out with any form of porcelain printing-frame; or it may be accomplished by binding the prepared plate to the negative at the bottom edge by means of stout gummed paper. A temporary hinge is thus formed, and the printing may be carried on in an ordinary printing-frame, examination being made by removing the back of the frame and turning the porcelain plate back. If not sufficiently printed, the paper hinge will

permit the return of the plate upon the negative without shifting.

When the print is made it must be well washed in clean water to get rid of the free nitrate of silver, as in printing on any print-out paper. It may then be toned in a good gold toning bath, the best results being obtained with the borax bath or one containing acetate and bicarbonate of soda.

The combined toning and fixing bath must not be used under any circumstances, although this kind of bath will tone these porcelain prints quickly and to any color. Prints so toned, however, will quickly fade. Separate toning and fixing in clean, freshly made hypo should be the method adopted. After fixing, and a few minutes washing in running water, the plate may be put into an alum bath made of two ounces of powdered alum to a pint of water. Be sure there are no crystals left in the water, or white specks will be formed. After the alum bath wash well for an hour, and dry. When dry the plate may be varnished or not, according to the taste of the individual worker.

IMPROVEMENTS IN SENSITIZING CARBON TISSUE.

A Record of Some Experiments in Printing with Bichromates.

BY H. W. BENNETT, IN "PHOTOGRAPHY."

ALTHOUGH the carbon process is the ideal method of printing for the pictorial photographer, there have been serious obstacles to deriving the full advantages from it in the hands of the ordinary small user that do not apply to those who work on a larger scale.

The first of these objections has been the absence of keeping qualities in sensitive tissue. It has been known for a long time that if tissue were kept absolutely dry it would remain in fair condition for several weeks, and the introduction of the Autotype Company's storage box, in which tissue is kept flat and the air dried by means of calcium chloride, was a step forward; but, unfortunately, tissue so kept is much more difficult to work satisfactorily than when first manufactured, especially if development should be prolonged. Instead of the tissue dissolving easily, as it would do if perfectly soluble, it appears rather to break away from the image with difficulty.

An obvious remedy is to sensitize tissue for one's self as it is required, this plan allowing us to keep a varied assortment of colors and to select, just when wanted, one or more pieces of any particular color, thus imparting more variety to our work than any other printing process will allow. The objections to this method of working, however, are more serious than those that apply to using tissue sensitized in the course of manufacture. Tissue sensitized in a bath is in every respect inferior to that made sensitive originally; it is much more difficult to work satisfactorily, being much less soluble; its keeping qualities for the same reason are practically non-existent, and—the most important objection of all—the resulting prints are very inferior in gradation and brilliancy. Added to these objections is the trouble of drying successfully, for, as the drying conditions depart from the ideal, the difficulties of working increase, and the quality of the prints obtained still further declines.

In using the word "brilliancy" it must not be understood to mean "contrast." The loss of brilliancy referred to is not the absence of contrast that might be caused by using a sensitized bath much too strong. If this were the only cause it could be easily rectified by sensitizing in a weaker solution, but it is a character that the prints retain, however weak the sensitizing bath may be. It consists essentially of the weakening or loss of the gradations in the lighter portions of the picture, those details that should be represented by light but well-marked gradations being instead simply a flat mass of gray, with scarcely perceptible variation; or, if the printing should be stopped at an earlier stage, a flat white devoid of gradation and a generally weak print will result instead.

Considering that one of the essential qualities of the carbon process is its fine

gradation, both in the extreme lights and in the deep shadows, this loss is the more noticeable, and, in some subjects particularly, the contrast in quality between a print made on tissue sensitized in course of manufacture and one on tissue sensitized by immersion is so great that no one making the comparison would use ordinary bath sensitized tissue if the ready sensitized were available, especially as this loss of quality is accompanied by so many other objections.

As sensitizing is in itself such a simple operation, and the ability to secure thoroughly good results on home sensitized tissue would confer so many advantages on the small worker, not the least being the opportunity of keeping a stock of insensitive tissue of various colors, including those not readily obtainable sensitive, and preparing any assortment desired for the day's printing, I have been making a number of experiments for some time past, my object being to so sensitize commercial tissue that it should possess, if possible, the following qualities:

First. In gradation and quality of finished result it should be equal to that sensitized in making. This is the most important qualification of all, since without this the other qualities are comparatively valueless.

Second. In solubility and ease of working it should compare reasonably with ready sensitized.

Third. It should be, as far as possible, independent of the conditions of drying.

It is useless to describe the experimental work involved or the substances tested before successful results were obtained, but I will give my conclusions and notes on the substances selected and their influence on the result and the method of working consequently suggested.

Potassium Bichromate. Although other chromium salts have been tried, none have worked so satisfactorily as potassium bichromate. That used has been pure granulated, supplied by the Autotype Company as especially reliable and suitable for the carbon process.

Tissue has been sensitized by immersion in plain solutions of potassium bichromate varying in strength from 1 to 4 per cent., and the utmost care taken to insure the most satisfactory drying. In all cases the resulting prints have been very inferior to those obtained on tissue sensitized in making, principally in brilliancy and gradation, as previously described. Although the contrast in the prints was greater when the weaker solutions were used, yet in all cases the character was the same; the lighter gradations merged into one flat gray with little variation, though the total contrast in the print might be fully equal to that given by ready-sensitized tissue. In addition the tissue has always been much more difficult to work; it has been much less soluble and the backing paper very troublesome to remove.

Among the various substances added to the sensitizing bath with the object of improving the quality of the tissue in working and also in the resultant prints, the following are those most worthy of attention:

Neutral Potassium Oxalate. The addition of this salt has been suggested by Professor Namias for conferring keeping qualities; but as my work has been directed solely to obtaining good results on tissue used soon after sensitizing, and as this salt is distinctly inferior in this respect to other substances that I had used, it has been discarded.

Sodium Carbonate. The results obtained by adding sodium carbonate to the sensitizing bath have been very promising, and for some special cases equal to those given by any other substance. The quantity that could be added with success required gauging very carefully, as it was found that if sufficient to insure solubility and easy working were used, other difficulties were introduced, and as a much smaller quantity would give improved gradation another addition was made in combination with sodium carbonate to secure good working qualities, which will be described in a later paragraph. The effect is to lengthen slightly the gradations at the light end of the scale.

Potassium carbonate is very similar in its effect to sodium carbonate; a smaller proportion is sufficient to produce the same degree of modification.

Neutral Potassium Citrate. This salt has been added to the sensitizing bath by Professor Namias for conferring keeping

qualities; and in testing it for my purpose —securing improved gradation—it was found to have a very marked effect. Used alone, however, the general working qualities of the tissue were no better than when a plain neutral solution of bichromate was used, but these qualities were easily secured by a further addition to the solution.

Sodium citrate may be substituted for the potassium salt; the differences are inappreciable.

Citric Acid. Although from the conditions recognized as being essential for the successful working of carbon tissue, especially when bath sensitized, this salt appears to be one of the least desirable additions to the sensitizing solution, yet it has given the best results in every respect. A small proportion produces a decided difference in gradation; the results can, therefore, be easily controlled or modified.

It has been stated in a preceding paragraph that the inherent defect in bath sensitized carbon tissue is the loss of gradation at the light end of the scale, the general effect being that which would be produced by exposing tissue to light and so fogging it or degrading its purity; and this gray veil robs the lighter tones of all their value, gradation, and brilliancy, and it still remains, even if the portions of the print protected by the safe-edge are quite clean. By no care or precautions in drying have I been able to overcome this defect, and those most experienced in working the carbon process have invariably stated that bath-sensitized tissue is distinctly inferior to that sensitized in course of manufacture. It has been this defect more than any other that I have endeavored to remove, and the results obtained are not only thoroughly satisfactory, but from the data given they can be modified by each worker as he may desire.

Taking the substances named, potassium oxalate may be dismissed, and the others may be placed in the order in which they have been described, sodium carbonate producing least effect, and citric acid being unquestionably the best, and also offering the greatest power of control. It is absolutely essential, however, to neutralize, or more than neutralize, the acidity of the solution, and the method of obtaining an alkaline bath is the determining factor in securing good working qualities.

Ammonia. I have only succeeded in sensitizing tissue that would be as satisfactory in its ordinary working qualities as freshly made sensitive tissue by making the sensitizing solution alkaline with ammonia, whatever substance has been added for modifying the gradation. Although various degrees of alkalinity have been tested experimentally, that which has been found to be the most satisfactory and the most simple to determine has been to add ammonia to the sensitizing solution, after all the other ingredients have been dissolved, until the orange-red color of the bichromate changes to a lemon yellow; and the smallest possible quantity of ammonia that will effect this change should be used. This amount will vary with the different substances or quantity of such substances added. In my earlier experiences with the carbonates sufficient of these was added to the solution to effect a similar change, as the value of this condition of the bath was recognized; but in all cases the results obtained were very inferior in many respects to those resulting from a smaller proportion of carbonate with sufficient ammonia added to complete the change.

For obtaining good working qualities—solubility, freedom from brittleness in developing, etc.—the value of ammonia cannot be overstated, and although its full effect is most noticeable when added to a strong solution of simple bichromate—the most unsatisfactory sensitizing bath—yet its efficacy does not appear to be impaired by any of the substances given in this article, but as they modify the tissue the effect of the ammonia has to be examined carefully by comparative tests. In all the following formulæ the quantity of ammonia represented by x is determined by the method given in the paragraph on ammonia.

Sensitizing Formulæ.

A.—	Potassium Bichromate	1 ounce.
	Citric Acid	¼ ounce.
	Ammonia	x
	Water	50 ounces.
B.—	Potassium Bichromate	1 ounce.
	Citric Acid	½ to 1 drachm.
	Ammonia	x
	Water	50 ounces.
C.—	Potassium Bichromate	1 ounce.
	Potassium Citrate	½ ounce.
	Ammonia	x
	Water	50 ounces.

D.—Potassium Bichromate . .	1 ounce.
Sodium Carbonate (crystallized)	½ ounce.
Ammonia	*x*
Water	50 ounces

In all cases the solids were dissolved separately and their solutions mixed.

The solutions will keep well in stoppered bottles. As a small quantity can be used if the tissue is kept flat—four or five ounces for six pieces 8½ inches by 6½ inches—the used solution should be thrown away, or a larger quantity may be taken and used several times if fresh stock solution is added each time. A solution used too many times will give uncertain results.

These formulæ work well with Autotype, Barnet, and Illingworth tissues. For Wellington, which is very soluble, the quantity of ammonia should be reduced to one-third of that given. A quantity of solution should be taken and ammonia added as directed, and twice its volume of stock solution without ammonia added to it. The tissue so sensitized will work in every respect similar to the other brands named with the full quantity of ammonia.

Results and Conclusions.

For general work solution A should be used, as it secures the finest possible gradation in the lighter work, a full scale of tones, good shadow detail, and contrast without harshness. From a negative suitable for carbon printing a rich print can always be obtained, as the tissue should be very uniform in quality and condition at the time of using. The difference between the various formulæ is entirely in the gradation resulting in the lighter tones. Solutions B or D may be used for under-exposed negatives in which the lighter tones are relatively too strong or harsh, or for any work when the gradation at the light end of the scale is too strongly marked and requires softening down. Solution C gives a result similar to B with the larger quantity of citric acid. Formulæ A and B are preferable to C and D.

The proportion of water may be varied according to the degree of contrast required, a stronger bath giving less contrast and *vice versâ*. This strength will be found best for general work.

The method of sensitizing adopted has been to immerse the tissue face downward in the solution for ninety seconds, then lay it face down on a sheet of glass, and squeegee gently to remove as much solution as possible, and if any surface moisture should remain on the back rapidly remove it with blotting-paper; then lift it by two corners and gently pull it from the glass, attach it by pins or clips to a lath, and hang it to dry.

Drying. Tissue sensitized by these formulæ is practically independent of drying conditions, provided that it dries within a moderately uniform time, from four to six hours. *Gas in the drying-room has little or no effect.*

In general working the tissue has been in the highest degree satisfactory and very pleasant to use after working ready sensitized tissue that had been kept in a box with calcium chloride. It is extremely soluble, dissolving very gently and easily at a temperature of 100°; the backing-paper is very easily removed after a few seconds' immersion in the developing tank, and there is not the slightest tendency to blister, nor break, nor to produce any mechanical defects even when development is very prolonged.

In almost all cases the tissue has been sensitized at night and used the following day, and no special precautions have been taken between drying and using, the tissue being simply put in an ordinary cardboard plate box. As an experiment, some was left freely exposed to the air for eight to ten hours after drying, and no difference could be detected.

As most of this work has been done during the present summer, the wet weather has been a severe test of the efficacy of the methods adopted, both in regard to drying the tissue and its after working.

Speed. Tissue sensitized by the solution given is slower than that sensitized in the plain potassium bichromate bath, but the gain in quality more than compensates for the loss of rapidity.

Although commercial tissues differ so much in speed when purchased sensitive, yet when sensitized on these baths they are all practically identical excepting the new matt-surfaced tissues, which require only three-fifths of the exposure of the ordinary kinds. Black tissue will be approximately

the same speed as Ilford P. O. P. when sensitized in bath A, so that if a narrow strip of this paper is placed along one side of the negative, it may be printed until the light tones are just as dark as required in the carbon print, and an actinometer dispensed with. Brown tissue will require rather longer exposure than this, about one-fourth, and red chalk about one-third longer than black, or until the silver strip is dark enough for toning.

Formulæ B, C, and D yield a tissue slower than that produced by A, the proportionate exposures necessary being approximately A = 4, B and C = 5, D = 6.

Keeping Qualities. I have tested the keeping qualities of tissue sensitized on these baths, always sensitizing a piece in a plain solution of potassium bichromate, and keeping under identical conditions for comparison. The method of storing has been under the pressure of an ordinary printing frame—a method that would be effective with ordinary P. O. P. for many weeks. Ten days has been the test time, and although the results with some sensitizers have been superior to that given by the simple bichromate solution, yet in no case have the prints been so good or as clean as on freshly-sensitized tissue. The "safe-edge" has always been degraded and the prints poor in quality. The solutions containing ammonia have been the most satisfactory, though far from good.

Desiring the best results in my own work, I have never been willing hitherto to use any other than ready sensitized tissue; and my object in these experiments has been to determine a method of bath sensitizing that should give the finest possible quality in the resulting prints, a power of control in character and contrast impossible in ready sensitized tissue, satisfactory working qualities, and uniformity. The results have been so eminently satisfactory that they have completely revolutionized my own practice; they are fully equal to those given by ready sensitized tissue at its best.

There are so many self-evident advantages in keeping a stock of various colors and kinds of tissue and sensitizing to suit the requirements of the moment that the method of working here given will probably be as valuable to others as it has already proved to me. One of the greatest disadvantages of the carbon process to all excepting those who work on a large scale has been the inability to secure their sensitive material in the best possible condition, especially when small quantities of several colors were required.

A REDUCING AGENT FOR PLATINOTYPE PRINTS, SEPIA TONED BY DEVELOPMENT.

BY GEORGE R. JOHNSON.

FINDING that I got many over-exposed brown-toned platinotype prints, I was constrained to make experiments for their reduction, and ultimately alighted on chloride of lime, which I have found to be fairly successful. My reason for trying the above agent was that I knew of its bleaching properties. I believe the chemical action which takes place is in some way connected with the chloride of mercury used in the developing formula, but the solution of this problem I must leave to more scientific heads than mine.

As to the permanency of the print after reduction by my process, I can only say that I have a print treated by it about twelve months ago, when I first discovered it, and the print seems to have undergone no change whatever in the interim.

The process is as follows:

Prepare a 10 per cent. solution of the chloride of lime with boiling water. It should be thoroughly stirred and allowed to settle and cool, after which it must be strained and kept in a stoppered bottle.

If considerable reduction is required, the solution should be used as it is; but in cases where only slight diminution of tint is desired the solution should be weakened by the addition of water. The print should be closely watched, and when the necessary reduction has been attained

it should be removed from the bath and thoroughly washed for about one hour. If the washing is not strictly carried out, the action of the chloride of lime will continue, and the print will turn color and probably reduce further.

Local reduction can be carried out with this solution by applying it to the part requiring reduction. This can be done without necessarily soaking the print. The solution can be applied with the finger tip or piece of cotton wool. A brush, if of any value, should not be used, as the chloride of line will rot the hair.

[EDITOR'S NOTE.—Mr. Johnson enclosed with the above note an overexposed platinum print, developed with oxalate of potash and mercuric chloride. One-half of this print has been considerably reduced in the manner he suggests. As we happened to have some platinotype prints which had been overexposed and developed for sepia tones in a hot bath of oxalate of potash, mercuric chloride, cupric chloride, and lead acetate, we wondered if Mr. Johnson's suggestion would act equally well upon these. Before doing so, however, knowing the deleterious effects of chloride of lime upon the paper, and noting also the length of time of washing, during the former part of which time the action of the chloride of lime must still be going on, leaving an uncertain ultimate tone, we discussed the point with a well-known photographic chemist, who very kindly advised us as follows: To destroy the effects of any chloride of lime left in the print, it is recommended to soak the print for a few minutes in a 5 per cent. solution of sodium sulphite, and then wash for, say, a quarter of an hour in running water or frequent changes. We tried this method upon our own prints, and found the effect was as described; the sodium sulphite solution at once checked any more action of the chloride of lime, a precipitate being formed. This bath was then thrown away and the prints were washed well. There was, however, a slight difference in tone between the reduced prints and the more correctly exposed ones, the reduced prints being slightly yellower in tone. Moreover, it appears to affect the high lights of the prints more than the darker parts. It seems to us from our observations that a very weak solution of chloride of lime, followed by the sodium sulphite bath, would act as a clearing bath upon platinum prints developed with the mercury, etc., hot bath. It is not advised that chloride of lime should be dissolved in hot, but in cold water. After standing for some hours it should then be filtered and kept in a stoppered bottle.—*Photographic Art Journal.*

New Professional Flash Lamps. The Prosch Manufacturing Company, of New York, is about to offer several new professional flash lamps that will be more powerful than anything offered to professionals before. This fall it will have a complete line of its new Proschlite lamps, ranging from the two amateur sizes, Proschlite I., at $1.25, and Proschlite II., at $2.50, to III., at $5.00; IV., at $10.00; V., at $15.00; VI., at $20.00; and VII., at $25.00. This latter size will be the most powerful lamp yet made by any manufacturer and will give a flame covering over twelve square feet. These lamps will be in addition to the present "Lightning," at $4.50; and the "Professional," at $9.00. Several new lamps built on the plan of these last two, but much larger, will be offered. These will be two at $15.00 and $25.00, with six and ten-inch projectors, respectively, designed for use by photo-engravers and professionals. The new Prosch Flash Lamp Catalogue will be out early this fall.

A New Light. In an electric lamp now being introduced the filaments, instead of being in ordinary bulbs, are enclosed in short straight tubes about nine inches long; the filament has a small curl in the middle to allow for expansion. These tubes are mounted end to end in a metallic casing, which serves as a reflector and also carries the leads and sockets into which the lamps fit. There is thus produced a single line of light which is very suitable for certain forms of illumination, such as shop-window lighting, lighting by reflection from the ceiling, decorative illumination, and the like.

CARBON PRINTS UPON CELLULOID: BY SINGLE AND DOUBLE TRANSFER.

BY A. J. JARMAN.

THE demand for carbon prints upon celluloid has increased considerably during the past two or three years. Although many persons have tried this beautiful process, few have succeeded so far as to produce with certainty a dozen prints without blistering, and many have given up this branch of carbon printing for this reason. It is proposed in this article to give a reliable method of working, so that the prints will be uniform and free from blisters.

In the first place the celluloid should be sufficiently stout to prevent buckling, with a very fine matted surface on one side. The sensitizing of the carbon tissue, too, should be done with a solution of suitable strength, giving ready solubility. The drying of the tissue should be carried on in a perfectly darkened room, and the sensitizing under yellow light. The cutting up of the dried tissue must be done under a deep-colored orange light. These precautions are necessary to obtain pure whites in the high lights and a freedom from color in the safe edging. It is here assumed that the reader has some knowledge of the carbon process, so that the directions given may aid those who have failed in the production of carbon prints upon celluloid.

The sensitizing solution is composed as follows:

Bichromate of potash . .	4 ounces.
Carbonate of Ammonia . .	80 grains.
Glycerine	30 drops.
Salicylic Acid (dissolved in hot water)	30 grains.
Filtered Water (or distilled Water)	100 ounces.

The salicylic acid may first be dissolved in 4 ounces of water, adding 96 ounces to make up the 100. As soon as the above ingredients are added and completely dissolved, filter the solution into a clean bottle through absorbent cotton. All is now ready to sensitize the carbon tissue.

Pour this solution into a tray about 20 x 24. Immerse a sufficient quantity of tissue in the sensitizer, and carefully unroll it beneath the liquid. Just as soon as it lays flat, turn it over face downward and allow it to remain just three minutes. Then remove it, lay face downward upon a clean slab of plate glass, and use the squeegee upon the back until all the superfluous solution has been removed. Wipe the back of the tissue carefully and lightly with a piece of clean rag. Lift it from the glass slab by the top corners, and suspend it by wooden clips in a darkened room to dry. Just as soon as the tissue is thoroughly dry it may be cut up for printing. The sensitizing solution remaining should be poured into a clean bottle, corked up, and kept in the dark room for future use.

Carbon tissue sensitized as above will keep well for two weeks if stored under pressure. Assuming that the tissue has been exposed beneath a negative and is ready for development, the following substratum must be at hand, having been previously prepared. It is composed as follows:

Gelatine (Heinrich's hard) .	2 ounces.
Water	12 "
Sugar	2 drachms.

Allow the gelatine to soak for an hour. Meantime prepare in a separate vessel a solution of

Chrome Alum	15 grains.
Water (hot)	1 ounce.

The gelatine, water, and sugar should be put in an earthen vessel, or prepared in a small oatmeal kettle (popularly known as a double boiler), so that the water boils around the pot or inner vessel and causes the liquefying of the gelatine. As soon as the gelatine is well melted and very hot, the hot chrome alum solution may be added drop by drop, stirring the gelatine solution vigorously at the same time. Keep up the stirring for a short time after the last of the chrome alum solution has been added. Then filter a small quantity of this into a cup or small pot, and as soon as it has cooled down slightly it will be ready for use.

Have at hand a mixture of acetic acid, one ounce; water, six ounces. Take the pieces of celluloid, cut to a size somewhat

larger than the tissue to be transferred, and rub the matt surface well with a piece of canton flannel, dipped into the acetic acid mixture, until the surface is quite clean. Rinse under the faucet, and lay in a tray of clean water for use. For single transfer, take a piece of the celluloid in the left hand by one of the top corners, and pour on some of the gelatine substratum while warm, having the exposed tissue soaked in clean water. Lay it upon the gelatinized celluloid, which must be in position on the squeegee board. Directly upon the top of the tissue place a piece of India-rubber cloth, smooth side uppermost. Then apply the squeegee gently at first, increasing the pressure until all the excess of substratum has been squeezed out. Lift the cloth carefully, wipe off all the remaining substratum with a wet sponge, and put the print aside until the remaining pieces of exposed tissue have been treated in a similar manner. In the course of a quarter of an hour development may be proceeded with.

This is best commenced by laying the prints in cold water to allow them to soak for about one minute. Then place them in warm water, and allow to soak until the tissue begins to loosen. Now lift the tissue by one corner, throw it aside in the waste basket, and proceed with the development by throwing warm water over the surface of the print with the right hand, holding the print by one corner with the left hand.

In the course of a short time the print will be seen to be fully developed. It must now be carefully rinsed in a stream of gently running water, and placed in a tray containing a solution of common alum (not chrome alum), three ounces of alum to one hundred of water. Allow the print to remain in this for five minutes only. Then, after soaking in another tray of clean water for five minutes, the print may be washed in a gentle stream of water and hung up to dry.

It will be observed that there is no sign of blistering or lifting of the film, and assuming that the exposure has been correct, there will be no difficulty in producing one dozen or one hundred celluloid prints in any color, everyone in perfect condition.

To produce carbon prints upon celluloid by double transfer, the process must be modified. Clean the celluloid as previously described, rinse under a faucet, drain, and while still wet pour over the matted surface the same substratum, draining the remainder back into the containing vessel. A large piece of celluloid may be cleaned and coated in the same way, four 5 x 7 pieces being cut therefrom when dry. As soon as the pieces of celluloid are coated they must be laid aside to dry in a clean rack.

When it is desired to make a double transfer the following directions must be carried out. The carbon print is developed upon a flexible support as in paper transfer, and dried. This being done, take a piece of the celluloid with its dried coating of substratum, cut it to a size a little larger than the print, and place it to soak in the 3 per cent. alum solution described above.

Meantime place the flexible support containing the print into clean water to soak for about fifteen minutes. The celluloid may be removed from the alum bath, and washed under the faucet. It must now be coated once more with the hot substratum, laid upon the squeegee board, and the wet print on the flexible support laid upon it. Cover this with rubber cloth as above mentioned, and apply the squeegee carefully and lightly, gradually increasing the pressure.

After about eight or ten strokes of the squeegee remove the cloth, and wipe the back of the support carefully until it is free from gelatinous solution. Then very carefully lift the celluloid and support together, starting this lifting by inserting the tip of the blade of a knife at one of the corners. Now suspend the celluloid, with the attached flexible support, to dry. When dry the support will come away freely from the celluloid. All that is necessary now is to place the celluloid, which will now have the print firmly attached to it, into a tray of warm water for half a minute, then pass it through a tray of clean water and suspend to dry. As soon as the drying is complete it will be seen that the print is perfect in every particular.

The print may now be trimmed, ready for delivery.

The substratum will keep in good working condition for about one week by the addition of a few drops of 10 per cent. carbolic acid solution. It may be kept in the inner vessel of the oatmeal kettle and melted at any time when required for use.

PROFESSIONAL PORTRAITURE.

BY CHARLES W. HEARN.

III.—EXPOSURE AND DEVELOPING.

(*Continued.*)

WHILE the processes of exposure and developing as practised by professional photographers are largely mechanical, yet some knowledge is required as to the proper method of changing the developer to meet different conditions, for which reason I wrote at some length upon this topic in the October issue of this MAGAZINE, advising the use of a multiplying factor as a means of simplifying dark-room manipulation.

Those who read that article are aware that its chief purpose was to dispel the notion that shortcomings in manipulation under the skylight can be overcome by "doctoring" the plate in the dark-room.

I am very well aware that the majority of my professional readers who do not use the factorial system of development will be reluctant to follow the suggestions given in my earlier article, since I myself until very recently did not feel like relinquishing the personal control over my negatives given by the method of development commonly employed in professional dark-rooms.

The questions naturally arise: Why advise this change of method so strongly: Why not make the negatives under the skylight, developing in the usual way, and save the annoyance of working out the factor and correcting the ingredients of the developer for every new emulsion we may use! Again, why advise experienced men to go to this trouble? These questions were in the main answered in my article; but, as my personal experience in making this change is probably that of the average reader, the basis of my present views will be worth stating here as more fully answering these queries.

For some two years or more I have discussed the desirability of this change with myself, so that my decision was not arrived at in a day. At first I thought the method not practical, especially for the development of those negatives wherein the lighting on the subject was confined to the face and adjacent portions of the figure, and lowered in tone as the distance from the face increases. An example which will occur to the reader is a vertical full-length figure. The lower part of such a subject would be almost lost under these conditions, but it is not always possible to so light the model as to produce this effect. In such an event resort was had to brush development to obtain the desired result. This was desirable because my subjects were to be printed in carbon, a method which has the peculiarity of picking up detail, which could only be subdued by corresponding intensity where the principal points of interest were to be. It goes without saying that negatives so manipulated, while they produced satisfactory carbons, rarely gave me platinum prints of the same value and tone.

Since then I have availed myself of the privilege of changing my mind (as advised by Mr. F. Dundas Todd), and no longer believe that these extremes of light and dark are always essential in a pictorial sense. For this reason I am now able to employ the multiplying factor where earlier I could not see my way clear to adopt. Again I found myself relying too much upon dark-room manipulation to save the values in light draperies. The weakness of this dependence upon dark-room dodging was particularly evident when at times an assistant has done the dark-room work, which is unusual. In such circumstances the resulting negatives came out as the subject was lighted under the skylight. All these things drove me to adopt the multiplying factor system, which compels me to do

what I advise my readers to do: always make your negatives under the skylight.

Confirmation of the wisdom of this change has come to me by observing the pictorial exhibits at the conventions I have attended. In these exhibits the bad effects of the doctrine of "helping" the work done under the skylight by negative manipulation during and subsequent to development have been plainly evident. Unless the faking of the negative after exposure is done with unquestionable skill, the prints will invariably be "out of key." It is always easy to detect the print in which the effects are faked, whether the faking is done in the dark-room or in the printing.

Many of my readers will remember their school days; how often they were tempted to rely upon the "key" or "pony" when such was available, giving correct answers to our problems in algebra, or trigonometry, or the correct translation of our lesson in Cæsar or Virgil. The "key" made the work easy, and we seemed to "get there." But were we as good scholars, or did we get the proper mental training, or as much inward satisfaction as when we puzzled our lessons out for ourselves? Let us look upon dark-room "doctoring" as a "key" or "pony" in negative making, and for our own good try and get along without it.

ART IN PHOTOGRAPHY.

Before taking up skylight work, it is well that we should first understand some of the elementary principles of composition broadly covering the work that we purpose to produce under the light.

I appreciate the fact that my undertaking to discuss composition is a most venturesome task. No one realizes the tremendous importance of composition more than myself. After such men as Beck, Hitchcock, Vanderpohl, Taft, Dow, W. J. Edmonson, Hamilton, and others have talked of composition at our conventions and in our magazines, it would certainly appear that anything that a mere photographer can say on the subject would be superfluous. But I am constrained to attempt it in the hope that as a photographer I may be able to help my fellows to apply some of the instructions of these teachers to our every-day practice of professional portraiture.

First let me give credit for much valuable information and help derived from my membership in the Lens and Brush Club of Boston,* an organization conducted on strictly educational lines for advancement in art knowledge, which is doing a great work for its professional and amateur members. The club lectures and criticisms of pictures, together with several series of specially prepared talks by artists of reputation, have been a source not only of profit, but also of awakening many to an appreciation of art principles and familiarity with the works of art.

It is too often the case that photographers in small towns think that "they do not have the subjects" to make the very best of work. If by that is meant the opportunity to make showy, bizarre studies of subjects with magnificent dresses and an abundance of jewelry, then you are, indeed, poorly situated.

While the many showy portraits made in our larger cities may be really good photography, it by no means follows that this class of work can compare for artistic quality with work of a different nature. Whereas elegant dresses and beautiful women may often be the subjects of artistic work, yet I have often been impressed by the fact that many people of the cultured and wealthy class are inclined to be photographed in the simplest gowns. Fine gowns do not make fine pictures, and the location of the studio in no way prevents your work from becoming famous for its artistic quality. A few plain grounds, a good lens, and possibly a few unobtrusive accessories are sufficient equipment, even if you have only an ordinary window to work by. If you have more than these, provided they are quiet in character, you are rich in the abundance of materials. It is simply the case of "the man behind the gun." To learn how to do it is all there is to it. Take for your subjects just such as are obtainable in your locality, and do not complain because they are not other

* The Lens and Brush Club has recently published a booklet containing its Constitution and By-laws, with the method of conducting its meetings, etc., for free distribution, with the object of encouraging the formation of similar organizations throughout the country. For copies address Fred. A. Frizell, Secretary of Committee, Pierce Square, Dorchester, Mass.

than they are. I cannot better explain this than by quoting from a lecture by Whistler: "Art is seeking and finding the beautiful in all conditions and in all times, as did her high priest Rembrandt when he saw picturesque grandeur and noble dignity in the Jewish quarter of Amsterdam, and lamented not that its inhabitants were not Greeks. As did Tintoret and Paul Veronese among the Venetians, while not halting to changing the brocaded silks for the classic draperies of Athens. As did at the court of Philip, Velasquez, whose Infantas, clad in inartistic hoops are as works of art, of the same quality as the Elgin Marbles."

COMPOSITION.

The moment we commence a picture we begin to compose. This does not mean that we are artists, except possibly in an embryo state. Our compositions, to be lifted toward art, must have in them some of the elements of beauty, thus showing results that emanated from the carrying out of a thoughtful conception of the brain. As we attempt to do this, arriving to a greater or less extent at a beautiful result, then so far do we advance in the direction of art, even if but a step. By the "elements of beauty" we do not mean to imply that our subjects must be beautiful, or that, if decidedly unattractive or even ugly, an artistic result may fail on that account. The beauty in them may be one or other of scores of other things. For instance, it may be the beauty of arrangement, either in the general composition or in special portions, but over and in all there must be unity if the composition is to be really successful. By this beauty of arrangement (for composition is the science of arrangement) is meant not only the pose itself, with the balance of the figure, the principal lines of beauty in the drapery of the figure, and the movement of its lines, but also of the accessories, the lighting, the shadows, the grouping of the lines of light and dark and other details which enter the picture. Beauty may also consist elsewhere than in the subject or in the arrangement, which, while it may well be composed and satisfactory, may not be the principal object of attraction in the picture. Thus it may consist in the conception in the artist's mind. In looking at his creation we may, for instance, read the life and character of the painter or photographer, as the case may be. The fine sensibilities, the temperament, the character, the aspirations and the grandeur of his own life may all show in part in the work which he produces. One of the greatest delights that we can experience is in realizing this beauty of the conception of the artist. When a man's work thus reflects his mental self, and that mental self is in sympathy with the picture painted on the canvas, the subject in every way supporting and carrying out the same feeling, and if this in turn be united with great beauty of conception, well painted, then that piece of work will embody within itself all the elements of a work of art, becoming a masterpiece of the "grand style," as Reynolds terms it.

As an illustration of this, take Whistler's picture of his mother. This is said by the critics to be one of his most successful, if not his greatest work. Those who have seen either the picture or a reproduction will readily recall that it is a horizontal full length sitting portrait of an elderly lady, with both the body and face in profile and placed to the right of the canvas. A study of this will not only show the mother, but the reverence of the son. He knew her best in the simplicity of her life, in the simple house dress that in its style and make was a part of her, because it reflected her taste. When he saw that dress, whether it was worn or new at the time, it became part of her individuality, and was, indeed, part of her. Without that dress the portrait would have been a failure, and the same could be said of the chair she sat in, plain as was her dress, simple as was her quiet life. While looking at this quiet lady sitting in her little chair, we can all appreciate Whistler's feelings: that he wanted the beauty of his mother in every line and wrinkle as they appeared to him. He wanted to express the grandeur of her simple quiet life in the dress and chair that were part of her, in a room that is almost austere because of its plainness and severity. We thus readily see the artist's reverence for his mother and get a true insight to his inner life, being shut out from the world. It shows

us a different Whistler than the one we may have conceived during his career, with its struggle for recognition, his intense opposition to his critics, and his final and complete success as one of the greatest of modern artists. This portrait of his mother, which unveils the soul of the artist, is plainly seen by all artists and those who are possessed of ability to read from such things. This chapter may never appear in any sketch of his life, but it is on record, and, like the picture, it will live.

Now, here is an element of beauty that lifts that picture into a work of art. That is beyond the mere technique of painting or anything at all connected with the breadth, composition, or arrangement of the picture, yet this picture is famous among artists for its beauty of arrangement. So highly appreciative is it that you are most likely to find copies of it in the possession of most portrait painters. We can see how easily the picture could have been spoiled by the addition or removal of even the least thing. Because of its simplicity it will live, while many more elaborate pieces, by equally great artists, will not last even the painter's lifetime, much less bring him fame after his death. It is not only on account of the picture by Whistler, but many similar things in painting and artistic photography, that very frequent allusions will be found in this series of papers to the much repeated recommendations of "Simplicity" in your work.

Without wishing to digress from our theme, I would like to say a word here in recognition of the artistic sense of some professional and amateur photographers in the selection of a point of view, the time of day, atmospheric conditions, etc., that result in a happy arrangement of the masses of light and shade and ærial and lineal perspective which help to produce a desirable composition. This may be noted especially in the work of such men as J. H. Field, George E. Tingley, Richard H. Kimball, Alfred Stieglitz, and others of the Photo Secession, and to quote only one from many foreign workers, Mr. M. Bachrouschine, of Russia, some of whose work was shown in the foreign exhibit of the New England Convention of 1902, perhaps the best exhibit of foreign work ever seen in this country. These qualities are also seen in the work of Mr. H. A. Latimer, a New England amateur, whose marines are wonderful in composition and vibration. Mr. Latimer has become exceedingly skilled in depicting a wave with the sensitive motion as it is painted, not in simply arresting motion by means of a speedy shutter. The average shutter picture of a wave is more like a white skin rug than a wave. If we cover up everything in such a picture except the wave, the skin-like texture of the wave would be as much a failure as is the texture of the objects in some paintings, where the only means of recognition left to us is the form of the object. When the photographs of such men as those mentioned exhibit grandeur, they are grand. When simple pieces they are equally grand because of their breadth, the elimination of petty details.

Now, while impressing upon the reader that composition is simply arrangement, and that one of the greatest beauties of arrangement is simplicity, it by no means should be implied that more complex things may not be beautiful in arrangement. This comes only to the genius who is able to handle such things successfully, and can only be grown up to as one's ability increases. At best, the complex arrangement is a difficult proposition to handle. There are other things that enter into composition beside arrangement, or, better still, arrangement or composition may be subdivided under various other heads for our more systematic understanding and absorption.

To quote from a previously written article published elsewhere: "Art is broad, with no very definable or set rules as to what should or should not be done, for in the hands of genius, who know no rules, all things seem to be possible of being done with success." Other artists of lesser light have generally accepted as an unwritten law that certain things are best not done, and that other things look well if done this way or that. For our education we would say that artists of the brush who have spent years in study and have received careful training are our best guides in art principles. We should never pit ourselves against them as a class, for in the nature of things they are right and we are wrong. We save ourselves

trouble and time and get more quickly on the right road by at once recognizing these facts, accepting the situation and ceasing to butt our heads against the brick wall, which does no harm to the wall, while giving us a headache.

As to the extent we may follow them in our treatment with the lens and pictures in monochrome is for us to find out. Suffice to say for the encouragement of photographers as a class, we can go very far—much more than appears at a first glance.

Thinking that a similar view may be held by some of my readers, I would say that an intimate professional friend, who is one of our best technicians (as designated in the first of these papers), and also possessed of considerable natural and acquired artistic skill, recently remarked, "All the artists can teach us is a few forms of composition, such as pyramidal, angular, circular, etc., and subordination," with which opinion we most emphatically disagree. If this statement had been made by a man of less marked ability, we would not have noticed it; but, as he represents the cultured and able class of our profession, it may be well to consider his remark.

What does the artist produce on his canvas that is impossible to the photographer? Or, better still, what can we do that he does? He employs color; we can only express ourselves in monochrome. He is able to obtain a composite expression that will give the soul showing through the eyes, and paints his conception of the subject's individuality. This is our chief weak point, for with us the consciousness of the sitter is very apparent, and we rarely lose this in the case of an adult, and the photographing to get the subject's individuality, instead of our own, in his picture is our aim and constant study to attain. While recognizing the weakness of our profession in this sense, there are occasions when a fair measure of success is accomplished.

In other respects we can at least be good followers to the pace the artists set us; first in our manipulation, in the proper selection of lenses as well as the employment of various printing processes, as to the mechanical means, and by securing and producing in our works the art principles which the artists and painters employ. While the lens naturally sees too much, this need not be our utter ruin, as at times we are fain to believe, since it may be overcome.

We can, however, balance our composition by line, spot, or transition of line or spot, by means of light or dark, by secondary objects or interests, with their proper weight of attraction. We can give drawing, perspective, atmosphere, values, and tone. We can produce a suitable background for each model, as does the painter. We can obtain breadth by loss of detail, mystery, suggestiveness, etc. We can have all parts of our pictures hang together; we can give gradation and vibration, and we can give texture. In this last respect we have the means, by proper lighting, of having an advantage to some extent over the painter. We can preserve the planes in their proper relation. We can obtain harmony, which is so difficult with the colors, and we can produce unity. There are a score of things for us all, the only difficulty being to overcome our commercial tendency in producing pictures by the multitude, in comparison to the quantity the painters produce. Our compositions and applications of art principles must need be done with lightning rapidity, compared with the time a painter employs over one picture, and, although his creations from nothing are well worthy of the higher rank given him in comparison with our own means of production, yet the attainment of a position of the greatest artistic success possible with the means at our disposal is a place so high that none of us need for a moment have aught but the greatest ambitions toward reaching that goal which would give us fame that would not only together with our creations, but would do for art photography that great value in uplifting it in the reverence of the whole human aace, that would once and forever set it on a pinnacle as one of the greatest of the arts, there to stay until the end of time.

NOT even the popularity of the golf girl—the latest of our athletic girls—excuses a photographer who poses a lady with her hands resting on her hips. Such a pose should be very sparingly used in portraiture. It may be possible in a character study of a fishwife.

PORTRAITS OF CHILDREN.*

BY O. H. BOYÉ.

FEW better opportunities for the attaining of charming studies by photography are ever brought before the camera worker than that presented by the interesting subject of child portraiture.

The photographer who possesses a genuine love for children and a keen appreciation of the many little things that only children can do and say has his way already paved for him to success. Particularly so is this the case if he add to these qualifications an abundant supply of patience and the faculty to grasp and take advantage of the occasional happy situations that his little subjects unconsciously fall into while at play before the camera.

At the outset the first step necessary is the securing of their confidence. This can readily be obtained by displaying a little tact in approaching them. The best way is to take them quietly at the beginning, and avoid plying them with too many questions if a tendency to shyness asserts itself—in fact, it is much better to leave children of this type to themselves for a time until they become accustomed to the surroundings and the strangeness wears off. When this point is reached, by interesting them with the explanation of some new toy or the like, their attention will be diverted and the fact of your presence gradually forgotten, or, at least, accepted as a necessary evil.

The common error made by many operators in handling children is that of approaching them too abruptly. Although it takes a little more time at the commencement, it is far better to devote a few minutes longer at this time, cultivating your little sitter and working him into the proper frame of mind necessary for the rendition of a pleasing portrait, before the camera is even touched. Once you have his good will and have been accepted as a new-found friend, the rest will be plain sailing. His interest must be held, however, and quick work done while you still command his full attention. Better make fewer plates while you have him in this interested state than to prolong the sitting after he has become visibly tired and restless.

Unless an unusually intractable case presents itself, the actual time consumed in securing the different positions is but a matter of few minutes; the point is getting him in a desirable state of mind first, and then losing no time in making your negative while the spell is on.

When a little fellow is brought into the studio for a sitting we usually adopt the following method: After the customary grooming that always is deemed necessary by the anxious nurse or attendant, he is ushered into an apartment fitted up expressly for his reception. In this playroom he is allowed full swing and amuses himself in various fashions until we are ready for his sitting. It is among these surroundings that we first make his acquaintance, and as much time spent with him here as is considered sufficient to secure his interest in what is promised to follow Very little trouble is experienced with the majority of subjects, after explaining to them a brief outline of what will be expected of them, to get them to enter in the full spirit of the undertaking. Occasionally, when a stubborn child is met who absolutely refuses to be swayed by your choicest blandishments, rather than disturb his equanimity, his sitting is made right here in this room, which is in reality a smaller operating-room. But instances of this kind are rare. Meanwhile, the larger studio has been prepared, background and accessories placed in readiness, and the camera, which is closed in to resemble a bookcase, stands in position with the slide drawn. When the young hopeful is led in, but little urging is required to get him to occupy the space arranged for him; this is usually by a small chair or table upon which some article liable to prove of interest is placed in order to attract his attention.

Frequently a number of poses can be gotten while he is thus amusing himself and is quiet for the fraction of a second

* Republished from the Convention Souvenir of the Photographers' Association of California.

required for the exposure. Mechanical toys interest children greatly, and by having a good collection on hand some one of them will particularly strike his fancy and be the cause of calling forth a variety of expressions ranging all the way from a smile to a yell. Once in a while a subject comes along who has passed the stage of being attracted by toys; it is then that a good stock of little stories or the knowledge of a few simple tricks will likely prove of advantage. We have had youngsters who have put us to our wits' end in studying up some scheme in order to arouse them into some degree of animation without result, and then, accidentally, before our stock of patience had entirely left us, stumble across some little trifle that we had previously overlooked which would have the effect of arousing them instantly into a being of life and action. One little fellow I have in mind, who gave us a severe tussle after trying every conceivable object, only gave signs of possessing an intellect when his mother happily remembered his great fondness for pins, and supplied him with a saucer full: It is needless to add that the proofs selected were from the plates made after the pins appeared.

While almost the entire success of a child's portrait depends upon securing a natural and suitable expression, the effect of light and shade, composition, and arrangement must be taken into account before the production can rank as an artistic piece of work. Backgrounds and accessories should be kept simple and unobtrusive, avoiding the introduction of any lines that would detract from the importance of the figure. We find that more satisfaction is gained from the use of plain light grounds and keeping the accessories, if any are to be used, of a character similar in tone.

As children are usually gowned in light colored material, the result of this arrangement masses the lights in the picture, and brings the only darks about the head, where the interest should be centred. An effect of this kind has a dainty appearance quite in harmony with the characteristics of the little people represented.

The question of allowing the friends and relatives who frequently accompany a child to assemble in the studio at the time of sitting is a much discussed one. Whether it is advisable to let them stay depends entirely on the people themselves. Sometimes they can render valuable assistance, but more often their presence has the effect of dividing the child's attention. When it is impossible to exclude them without offending, the better policy is to make the best of it, and direct their efforts to where they can be used to good account. Outline your plans to them quietly and briefly, and caution them to appear only when instructed to do so. If you go about your work in a thorough manner they will soon have confidence in your ability, and realize that to interfere would be to jeopardize the success of the sitting.

Notwithstanding the many drawbacks and petty annoyances constantly met with in the portraiture of children, personally I derive more genuine pleasure in photographing these little people than in all the other branches of the art combined. Once in a while, after an unusually trying ordeal with a real tartar, I am about ready to take part of this back, but probably the very next little tot will be a perfect jewel, and more than make up for the shortcomings of his predecessor, and serve to strengthen my convictions all the more. To the photographer with a responsive chord to all the winning traits that childhood is capable of, their coming and going will be remembered as just so many bright spots during the day's work, instead of the bugbear it often appears to some.

Sensitized Silk. A few years ago a boom in sensitized fabrics threatened. The idea did not catch on; it is essentially amateur, but occasional inquiries are still heard. Cotton or silk may be sensitized as follows: Prepare ammonium chloride, 100 grains; Iceland moss, 30 grains; boiling water, 10 ounces. When nearly cold, filter, and soak the fabric in it for fifteen to twenty minutes. Dry, and then soak for fifteen minutes in a silver nitrate solution, 20 grains to the ounce, just rendered acid with nitric acid. Dry in a dark room, and overprint. Tone and fix as usual.

PICTORIAL FACTORS.

BY MAX FERRARS.

THE effect considered most important in modern photography is atmosphere. The sharpness and minute refinement once so striven after are now sacrificed to this. Before considering the meaning of atmosphere more exactly, let us turn for a moment to the "picture." By picture we mean something that appeals to our artistic sense, in contradistinction to a mere *representation* of something seen.

We may argue that the temperament shows the artist; but such reasoning brings us no nearer the point. Let us inquire as to the *effect* of the artist's temperament. First of all, it invests an otherwise commonplace object with an original conception—the conception of character gifted with penetration, imagination, and love of beauty.

By the reproduction of an impression made upon one so gifted, it becomes common property.

If we regard a portrait of Bismarck, for instance, by Lenbach, we see more than a faithful likeness of the original; we see more than if the original were before our very eyes; we see with Lenbach's eyes, because he not only reproduced his impression, but toned it himself.

Raphael would still have been Raphael even if he had no hands. *Why?* for he would have understood how to *see!* The poetic disposition consists in seeing, hearing, feeling, and, above all, in the conception of what is seen. It is not alone an appearance in nature, but the glamour of poetry by which an imaginative spirit will surround its representation, which transforms it into a work of art.

The natural appearance (view?) would be the same whether we looked at it from an upright position or standing on our heads; but stand the picture upside down, and it becomes incomprehensible and much more difficult to copy. For the copy will be found, on being placed upright, to have lost most of the significance of the picture, even if it be, from a photographic point of view, a fac-simile of absolute accuracy. In looking at the upright representation we should have *unconsciously* absorbed the characteristic points of the picture; we should possibly have added to their significance by our own conception of the same. Every reproduction of an object is an interpretation, a half-unconsciously revised version, substituting for the literal truth the universal probability.

This reproduction, "though a temperament," affords us more pleasure than the mere original; for it is a triumph of mind over matter, as it were—a work of art impressing us with the sense of power, and all the more so for the simplicity of the means by which the effect is gained, besides which the pleasure of seeing is a lasting one.

A beautiful appearance in nature is the result of various happy accidents, in many instances purely transitory; these favorable conditions may be immortalized by the artist, while the unfavorable ones, although just as liable to occur, will be passed over, and never more disturb the harmony of the impression.

To attain this harmony a painter may modify the details of the subject according to his fancy, omitting some altogether, emphasizing others which add to the significance of what he depicts; but the photographer is only able to gain this end by waiting for and studying the phase which will give the desired effect, and by carefully selecting both distance and point of view.

The harmony of a picture is founded on the different effects of contrast—light and shade, coloring, depth, and sharpness. Every form of contrast is a form of expression. This means of expression we dare not underrate, seeing that every pictorial representation is considerably less in intensity than that which it represents. In copper engravings the deepest shadows are put in solid black, and it is the saturation of the pigment which gives these engravings the advantage over others. We make use of the most extensive scale of tones, first, because even so our means of expression are very limited; and, second, because it saves our eyesight.

The contrast between an object in deep shadow and one in bright light is not nearly

so striking either to the eye or the plate on a flat surface as it is on a modelled one. The use of weak graphite, or any weak color is generally a confession of failure; it may possess certain advantages, but these are counterbalanced by the disadvantages.

Some modern photographers attempt to conceal flaws by these means, using gray in gray, yellow on white, etc. But if those periodicals which sanction such methods were *printed* in yellow, the circulation would surely cease, as the strain of reading them would become so great. And what about yellow illustrations? Next to the quality of *strength*, the work of the artist with a purpose should be distinguished by *breadth*. On looking at an ordinary photograph with bushes in the foreground, we find the same scale of tones repeated on every individual leaf. From right to left, as far as they reach, each has the same high light and the same patch of shadow. And so it is in the middle distance and in the background. Atmosphere is entirely lacking. At first the public was so charmed by the accurate drawing of photography as to overlook this fault, but since then its eyes have been opened. The disadvantage has been met by some with careful selection of lighting; by others, with trickwork, with seeking to do away with the "busy" effect by means of retouching.

To the artistic eye, however, this artificially attained effect of breadth is superficial and of no value. The painter, as we have before remarked, may succeed in producing that breadth in which the subject was lacking by means of considerably modifying the light and shade. To the photographer this is not possible. He must preserve this most important quality of breadth by means of selecting lighting which distinctly separates the various planes of the picture.

The effect of breadth is produced by allowing the principal masses to stand out from the less important patches of dark or light, instead of forming a confusion of meaningless shapes. Each mass should be allowed its proper "value" according to the distance from the eye in which it is found.

By this management of *contrast* it will be possible to attain the effect of color as well as of tone. The extremes of high light and shade, which distinguish an object as belonging to the foreground, must on no account be brought into the middle distance. One means of attaining "values" is the consideration of the varying sharpness of outline. In nature, near objects will, of course, appear clearly defined; those in the background blurred or "lost." This gives us the various planes. The attainment of breadth, not of the real article, but of the breadth achieved by means of general fogginess, rough paper, and flat negatives means the sacrifice of other important qualities. These tricks cannot alter the feeling against the harmony found in the photograph taken by chance. A favorable effect of massing a happily-posed silhouette gives a better impression, but they are counterbalanced by the discords.

Strength, tone-values, softness, and delicacy are means of expression, by the proper use of which, combined with breadth, the harmony and poetic influence of the picture arrive at their true significance.—*Der Amateur Photograph.*

THE DECLINE OF RETOUCHING.

BY R. ENOS.

TURNING over a collection of prints made from collodion negatives in the seventies, I was much struck by the beautiful and delicate modelling in the faces. It was no new feeling of delight, for I have often experienced it when turning over old daguerreotypes, or ambrotypes, or old albumen prints—the admiration for the excellent technical work of those days. Those old-liners had much against them. The plate had to be made, exposed, and developed—all in a few minutes. The plates were very slow—slower than any we use to-day for any ordinary work. There were all sorts of chemical troubles to worry the photographer, and there was

no retouching to help him. Looking over these old pictures, the thought occurs to me whether photography has improved as it ought to have done. Perhaps the work of the best men is better than the best work of thirty years ago, but I have not seen enough of the latter to judge. But our average every-day work does not seem to have advanced much. Why? I think the discovery of retouching has had much to do with it.

It was about five years ago that my eyes were opened. I read in the MAGAZINE that Mr. Hollinger had no retouching desk, and did all his retouching himself. There were other things, such as developing thirteen plates at once, but the retouching was the part that I noticed. I thought it out, and came to the conclusion that we ought to call ourselves artist-retouchers instead of artist-photographers. My wife and myself are the retouchers in our firm, and we were both wearing glasses. "Why," I thought "can't I let the camera do the work instead of doing it myself with the-pencil?" I set to work to save retouching. To my surprise I found that I did not know everything about lighting. In my spare moments (I have these, unfortunately) I practised lighting, using my wife or one of the children to experiment with. I found that I could get a much softer, kinder light than the rather harsh light which I used to call concentrated. With careful development and more care in lighting I can now do better work, and only do about a quarter as much retouching as five years ago. My trade here clings very much to glossy paper; but I have managed to make the people like a very fine matt paper. I can often turn out a negative of some young person without a touch of the pencil. Mr. Hollinger has saved our eyesight and eased the work. I believe that if we had been forced to study our lighting more, and had not discovered retouching, photography would to-day be better than it is.

THE FLATNESS OF DISTANCE.

WE have met several men who have taken up telephotography only to drop it because they find their pictures so flat and uninteresting. The lens is thrown aside, and is accounted among the many new-fashioned delusions. It is not everyone who can choose contrasty pictures, which give a black mass of shadowed rock mountain immediately in front of a more distant snow-cap gleaming in the sun. The average telephotograph bears close relationship to an enlargement of a small patch from the "distance" of an ordinary landscape photograph. Take such a small patch and enlarge it ten diameters, and the result—even apart from grain—will be extremely weak and washed-out. And it will not be widely different from the pictures which have caused the abandonment of telephoto lenses.

Photographs of distant mountains are generally wanted, first and last, sharp. They must have all the distinctness which they present to a keen eye, and with nothing to replace the color which blends the original. In other views, and particularly in distant views of cities, a little atmosphere is often the making of a beautiful picture, as against an admirable photograph. But haze—even on the clearest day—may be, and often is, the cause of weak pictures. A yellow or other screen, adapted to the special brand of plate used, will largely overcome this defect. And the contrasts of light and shade which are so carefully watched and waited for in normal work are equally essential in telephotography. The smaller patchy shadows of a hard noon may prove fleshy and worthless, but an exposure in the oblique light of an early morning or sunset will give the strong but transparent shadows which go to the making of pictures.

The negative of a distant object often suffers the flatness of overexposure. The rule of increasing the exposure by the square of the diameters of magnification is one to be followed only under considerable modification. "An enlargement of six diameters, an increase of exposure thirty-six times," says the rule. The photographer who gives half a second exposure to his view of a nearby house calculates eighteen seconds for his picture of the

valley beyond. But, in the first place, he exposed for the foreground and for the shadows; in the second case, he has no foreground. And every photographer knows how long an exposure a dark foreground needs. Hard-and-fast rules cannot be made here, but a fair estimate is that a view commencing a quarter of a mile away will be fully exposed for one-twelfth of the exposure required for a view with a foreground ten yards from the camera. In practice, therefore, the increased exposure may be considerably cut down.

Even if the lighting is well chosen, haze avoided, and correct exposure given, the plate may be easily spoilt in the dark-room. And the fault here is generally under-exposure.

If the camera is stoutly stayed to avoid any chance of wind-shaking, slow plates should be used. Then with a non-clogging developer, and without undue forcing, give them full development and some minutes over; by this choice of plate and developer the lights will be obtained without too much risk of fog—even if the negative has to be much forced.

Telephotography—in the accepted sense of photographing *distant* objects—is not the simple work which appeals to a beginner. There are no vital difficulties in it, but the photographer who takes it up and succeeds will—if he is honest to himself—consider himself in the class of expert specialists, and charge accordingly for his services.

THE DISTANCE SCALE.

BY F. E. MILLS.

It should be a matter of grave deliberation when one is about to purchase a camera, as much depends on the class of work to be done, as well as on the type of instrument one finally selects.

The man who buys a fixed-focus camera for woodland scenes is almost as badly equipped for the fray as he who purchases a stand camera for busy city pictures.

When photography first claimed me as a victim, I accepted the advice of the salesman, and left the shop the proud possessor of a hand-and-stand camera, with bright-red bellows, fitted with a view-finder and a focusing (or distance) scale on the baseboard. To take a picture while held in the hand one had to extend the bellows till the arrow pointed to "Infinity." This much was gleaned in the shop; but soon I was desirous of trying the other distances, but was puzzled to know what objects would be in focus if the arrow pointed to, say, ten feet. The salesman could not say, and visits to several other camera emporiums proved fruitless. The one idea was, that if the arrow pointed on the fifteen feet an object at that distance would be in focus—nothing more, nothing less. How to guess the fifteen feet correctly? That was a puzzle, especially when the object might be moving; but, as luck would have it, the very information I was in search of was given out one evening at a club meeting.

A copy of the "Scale of Distances for Focusing Hand Camera" is appended.

FOR LENS 5½-INCH FOCUS.

F/8.

N.	F.	D.
5	6	7
6½	8	10
8	10	14
9	12	19
10½	15	30
12	20	55
14	25	121
15	30	625
16	32	Inf.

F/11.

N.	F.	D.
5	6	8
6	8	12
7	10	17
8	12	25
9	15	43
11	20	160
12	23	Inf.

F/16.

N.	F.	D.
5	6	9½
5½	8	16
6	10	27
7	12	50
8	15	300
8	16	Inf.

F/32.

N.	F.	D.
4	6	12
5	8	6
5½	10	79
6	12	Inf.

N = nearest object in focus. D = distant object. F = point focused on.

The formula for finding the nearest point in focus when indicator is set for "Infinity" is simple, and is: Multiply the *f* value by 100 and by the square of the focus of the lens. Result is in inches.

Example.

Lens 5-inch focus, *f*/8

$$= \tfrac{1}{8} \times 100 \times 5^2 = \tfrac{1}{8} \times \tfrac{100}{1} \times 25$$
$$= \tfrac{2500}{8} = 312 \text{ inches} = 26 \text{ feet.}$$

The calculation for working out the table given involves an algebraic equation which I will not attempt.

With the focusing scale the hand camera has all the functions of a stand camera, without any of the drawbacks. There are many to whom the figures on the distance scale of their cameras are meaningless, who work at "Infinity" for hand work, and who resort to tripod and focusing cloth when taking pictures in the foreground, knowing not that it is possible to do everything in the way of picture-making with their camera in hand by a judicious use of the scale.

It will be seen by the figures given that the distance must be correctly gauged when the focus is at six feet, as there is only one foot either side of the object to be photographed; but as the bellows are moved back toward "Infinity" the margin becomes greater. We find with fifteen-feet focus at *f*/8 there is a difference of nearly twenty feet between the nearest and most distant object in focus. That gives us plenty of latitude, and it will be found that fifteen feet is a good all-round focus for figure work, street scenes, and groups. The six-feet mark should be used only for portraiture, and the ten feet for figure study and portraiture. Figures on the move are difficult to deal with successfully at these two distances. At twenty-five-feet focus objects in the middle distance can be dealt with; the background will then be nicely softened down.

I have given an example of the indicator set at "Infinity" and the lens working at *f*/8; but it is better (except when taking cloud studies), if the light will allow, to work the lens at *f*/16, the indicator being set at sixteen feet. The "depth of definition" will be from eight feet to infinity, whereas, with the same stop and the indicator set at "Infinity," there is a range of from about seventeen feet to infinity only. This is an important point too frequently overlooked.

When taking an object which occupies the centre of the plate, and to which the remainder of the composition is to be made subordinate, the lens can be worked at full aperture. The edges of the plate being somewhat out of focus will give solidity and roundness to the principal object, and so throw it into bold relief.

Not having to stop the lens down when working with the distance scale is a great advantage, as even in the dull days one can successfully work with camera in hand.

To conclude, one can but feel thankful to the inventor of the scale when he views the tedious endeavors of some friend who, in order to get a fine focus, stands with his head enveloped in yards of thick black cloth, while the sun pours down unmercifully on his unprotected back—on days, too, when the temperature is 82° in the shade.—*Photographic News.*

ITEMS OF INTEREST.

A Roland for His Oliver. A photographer in the East End of London was recently honored by a call from a man who was wheeling a baked-potato can. "I want my photograph took," observed the caller. "With pleasure," was the reply. "Do you wish the potato-can to be in the picture?" "Well, it's like this 'ere," explained the potato merchant. "My brother Bill, as lives in Edinboro', sent me

'is photograph last week sittin' down at a pianner. That was a bit o' brag on Bill's part, you know, master, 'cos 'e ain't got no more idea of playin' a pianner than a cow 'as of preachin' a sermon. So I thought I'd take Master Bill down a peg or two if I sent him a photograph of me and the can 'ere." "I see," laughed the knight of the camera; "you're playing your potato-can against your brother's piano, eh?" "Not exactly that, mister," was the answer. "I thought if you could shove it in the background so that it came out a bit misty like, Bill'd werry likely take it for a motor-car."

Everything up to Standard. One of our most (financially) successful photographers attributes a large measure of his success to his careful supervision of every negative and print. He is old of the old in his sticking to good glossy paper, good posing, clear definition, full measure of retouching. Much of his operating he does himself; but whether his own work or that of his operator, every negative passes under his eye before printing. He sends out unfixed proofs—sometimes from unretouched negatives—and in other ways ignores modern methods. But no proof ever goes out from a negative which does not please him. The negative is not discarded for any technical fault—such does not occur—but any stiffness or awkwardness in line or pose is severely dealt with. Prints must be printed just right, evenly toned, perfectly spotted. The customer cannot select the best from a set or choose a dark print to work off on a less particular friend. Every picture is like its fellows, and all are good.

Result: a pleased customer (usually considered a good advertisement) and financial success.

EDITOR'S TABLE.

OBITUARY.—Our readers will hear with regret that Mr. W. G. ENTREKIN, of Philadelphia, died at his residence, in Manayunk, October 18th, at the age of seventy years. Mr. ENTREKIN was one of the oldest among American photographers. He learned his profession in 1856, and during the next few years travelled as a photographer with a studio on wheels—a method of doing business more popular at that time than to-day. In 1861 he was employed as a photographer with the Army of the Potomac. After the war he established studios at Manayunk, Norristown, and Philadelphia, doing a high-class business and winning considerable fame as a portraitist.

Mr. ENTREKIN was perhaps best known to the profession for his invention of the Entrekin Burnisher. For this he received the gold medal of the Franklin Institute and the French Academy of Mechanics, together with the highest award of the National Photographers' Association, and the Entrekin Burnisher was at one time the most widely used of the instruments of this class, being introduced in Europe, and as widely appreciated there as in this country.

WE have received from Prof. D. J. COOK, of the Illinois College of Photography, the fourth book of his series, *More Light in Negative Making*. This book deals particularly with negative manipulation; the defects of negatives, their cause and cure; intensification and reduction, and the after-treatment of faulty negatives, preparatory to printing; with the best methods, complete tested formulæ, etc. Illustrated, in paper covers, 50 cents. Like the others of this series, Mr. COOK's book is plainly and practically written. We are informed that the fifth and last book of the series is now in press, and will shortly be ready for distribution.

A photoengraving department has been installed at the Illinois College of Photography, and is promising well. Mr. LEWIS FLADER, President of the International Union of Photoengravers, visited the College recently and looked over the equipment of the engraving department, in which he expressed his satisfaction.

A CATALOGUE of stereoscopic views and lantern-slides, published by CHAS. BIERSTADT, of Niagara Falls, N. Y., is received. This catalogue covers some 32 pages and embraces a great variety of views of Niagara Falls, sculptural subjects, and Western scenes. Those interested should obtain a copy of this list for their files.

THE advertising of the Agfa specialties (BERLIN ANILIN CO., New York) will hereafter be in charge of Mr. T. HARRY HALL, a gentleman well and favorably known in the trade. The Agfa advertising has always been as aggressive as it is attractive, and

we wish Mr. HALL every success in continuing the good work.

We note that the celebrated *Agfa Handbook* has been so widely appreciated that the company has decided to issue a new edition. Readers of this magazine desiring copies of this handbook can obtain them on application.

MR. EDWARD L. NEWCOMB, the well-known editor of the *Photo-American* and manufacturer of the E. W. N. specialties, formerly located at the Bible House, New York, informs us that he has removed to 20 Hoyt St., Stamford, Conn. Here a fine new building has been erected, of which Mr. NEWCOMB is the proud owner. The change gives him laboratories and testing-rooms for his experiments and abundant space for his publishing and manufacturing departments. We congratulate Mr. NEWCOMB upon his prosperity, and wish him increased success.

TWO very dainty cards for fall and winter portraiture are the new Wisteria and Adelino cards, just introduced by the A. M. COLLINS MANUFACTURING CO. The Wisteria measures 6½ x 8½, and is enamelled and waterproof. It is designed for oval and square pictures from 2 x 2¾ to the regular cabinet size. The Adelino, either in gray or white, is an exceedingly tasteful card, 6 x 9, designed for oval and square pictures from 2 x 2¾ to the regular cabinet size. Both these handsome cards are packed in boxes containing 12 dozen cards, at very moderate net prices.

WE have received from Messrs. ROSS, LTD., copies of their new 1903 catalogues, Nos. A. and C. These catalogues contain full particulars concerning the large variety of photographic objectives manufactured by Messrs. ROSS, LTD., together with an equally large variety of apparatus for outdoor photography and photomicrography. Photographers who would keep themselves well informed with regard to the latest introductions in this field should not neglect to write to Messrs. ROSS, LTD., asking for copies of these catalogues.

MR. G. H. FOWLER, after many years of successful work in Charlotte, Mich., is building himself a new studio at 46 N. Washington Ave., Battle Creek, Mich., which he hopes to open within a few weeks. Mr. FOWLER has our good wishes in this change of location.

WE regret to hear that our old friend Mr. MENZIES CUMMING has discontinued his connection as editor and manager of the *Southwest Photo*, published at Dallas, Texas. Mr. CUMMING rejoices in a strongly-marked and genial individuality, the expression of which in his journal we have taken pleasure in for years. We hope that Mr. CUMMING will not entirely sever his connection with the photographic world, and that we will hear from him in some other direction.

PORTRAITS BY LANGFIER, LONDON.—In our report of the English photographic work shown at the National Convention we mentioned an unsigned exhibit consisting of three bust portraits, showing as many views of the same subject, which attracted much comment by reason of its fine quality. The three prints were finished in red chalk and mounted upon one card, an harmonous effect being secured by water colors being blended together in agreeable tints. We are now informed that this unsigned exhibit was sent by Messrs. LANGFIER, 23a Old Bond St., London, the omission to sign being an oversight. Those who saw the prints will doubtless be glad to know by whom they were made. The Langfier Studio is one of the leading studios of Great Britain, and its work stands deservedly high in English portraiture.

THE possibilities of the hand-camera in the hands of an expert are cleverly shown in a bromide enlargement from a small negative by Mr. J. C. HEMMENT, which we were shown a few days ago at the New York office of TAYLOR, TAYLOR & HOBSON, LTD. The 16 x 20 print showed a group of three-race horses running at full speed, the camera having been held at right angles to the line of motion and probably within ten or twelve feet of the animals. In making the original 5 x 7 plate the new Cooke portrait lens of thirteen inches focal length was employed in order to obtain a large image. Although worked at the full aperture of the lens, *f*/4.5, the photograph shows every visible vein and muscle in the horses. It is needless to say that a focal-plane shutter was used for the work.

General Catalogue No. 16, just issued by H. A. HYATT, St. Louis, is received. It impresses us as one of the most complete professional reference-books we have seen for some time, and we would urge our readers to get a copy with as little delay as possible. The book consists of about 200 pages, 7½ x 10½, abundantly illustrated. It describes in an interesting way some 1000 odd specialties for professional use exclusively, and is a book without which no photographic establishment can be considered complete. Those who desire copies should send 10 cents with their request, to cover the expense of postage.

MR. E. O. HANN, of Howard, S. D., a mail course graduate of the American School of Art and Photography, has moved to New Whatcom, Wash., to join his brother in operating the Hann Studio of the latter city.

INTENDING exhibitors at the Chicago Salon are reminded that all pictures for that exhibition must be at the Art Institute, Chicago, *not later than December 15th.*

CHILD PORTRAIT

Moses & Son, New Orleans, La.

WILSON'S PHOTOGRAPHIC MAGAZINE.

FOUNDED BY EDWARD L. WILSON.
L. W. WILSON, EDITOR.

VOL. XL. DECEMBER, 1903. No. 564.

THE OLD YEAR AND THE NEW YEAR.

To all our readers and co-workers, old friends and new, here at home and abroad, Health, Happiness, and all the Season's Good-will as the old year 1903 passes to give place to the New Year 1904.

We are come to the end of a memorable year in the life of the MAGAZINE—the end of the fortieth volume of that record of usefulness and fraternal help which began with the *Philadelphia Photographer* when American photography was young. During the year he who inspired the work of the magazine, and, single handed, guided its innumerable activities for almost all these forty years, passed to his reward, leaving his work unfinished in our hands. Without him the task grows heavy and difficult, and we pause at this fortieth milestone for a personal word with those for whom the work is being carried forward.

When Edward L. Wilson began his life-work for American photographers, in 1864, professional photography was at a low ebb. The individual photographer and the fraternity as a craft were in sore need of help, direction, and encouragement in their work. Things have changed for the better since that time. The good seed sown in these pages by hands now stilled has borne magnificent fruit. The American photographer of to-day stands pre-eminent among his fellows, in enterprise, in business methods, in prosperity, and, above all, in the variety and quality of his product.

And yet, in spite of these abundant signs of growth and progress, there is a strange similarity between the conditions which faced the photographer of the early sixties and those confronting the photographer of to-day. To-day, as then, the individual photographer sorely needs the practical help and encouragement which can only come directly or indirectly from his fellow-workers in the craft. The intensity of competition, the overcrowding of the profession, the complex difficulties arising from the presence of the amateur, the higher standards of work now prevalent, and the peculiar state of the industrial side of photography, all demand the utmost intelligence and resourcefulness in the individual who seeks success.

To meet these real difficulties and overcome or make the best of them, we offer the same help, as efficacious as ever, which Edward L. Wilson offered to the photographers of earlier days. There is no surer road to success than knowledge—the reading of a good professional journal, the persistent following of the advances which take place in photography as it progresses, the careful and intelligent study of what passes in the active life of the craft as mirrored in these pages month by month. To be informed is the best assurance of growth and progress.

In the pursuit of this special knowledge the individual photographer is largely dependent upon his conventions or craft gatherings and his professional journals. This magazine has always supported the conventions, encouraged them, and fostered the photographers' associations. But there is a growing feeling that the conventions do not offer the practical help they should give; that the associations are not

in earnest in their work, and trust too largely to luck or chance in their activities. As a natural result, the practical photographer realizes more and more that the practical trade journal is his most effective helper, supplying new ideas, new styles and methods, reliable instruction, and the news of his craft. And he is right in this. No convention held during the last ten years has given as much help to the practical photographer as can be had (at one-tenth the cost of attending a convention) from a year's subscription to this MAGAZINE.

We put this plainly and frankly before our readers because we want their practical support for the coming year. There are not wanting indications that the tide of prosperity we have enjoyed has passed its height. Business will, perhaps, be a little more difficult during the coming year than in the past. The photographer building up his business will need more novelties, more ideas, and better business methods if he desires to get new business and hold his present volume of trade. To meet these conditions we have arranged for an unusually helpful and attractive volume for the new year. The special needs of the professional photographer will have particular attention in papers written by practical men. Business methods, new styles, skylight work, the art side, and the workroom will be dealt with by those competent to give practical help. Our subscription list grows steadily, but we want to still further increase the number of photographers receiving the MAGAZINE regularly.

To-day, then, we ask your practical support in the work we are doing, in the shape of your subscription for 1904. Look over the contents and index given with this issue, and you will see that the MAGAZINE is an investment which you cannot neglect without loss; which brings you practical and substantial return. You can show your good-will and strengthen our hands by your prompt response.

The special combination offers made on another page should not be overlooked by those who feel the need of good reading. There is absolutely no profit for us in these special offers. They are designed simply to secure the prompt remittance of your subscription to the MAGAZINE.

ENLARGEMENTS ON CONCAVE OR FLAT-GLASS SURFACES.

BY A. J. JARMAN.

THE production of enlargements upon concave glass surfaces without the aid of the transfer process is often desired by many photographers because there is a demand for this class of photograph. It is advisable to procure oval glass plates, the concavity of which is not too deep, for two reasons: first, it is somewhat difficult to secure an even focus; and, second, the sensitive surface must not be too thick in the centre of the plate.

There is a method by which these enlargements may be produced very satisfactorily by means of a collodion emulsion, which must be prepared with care, and kept at all times away from actinic light. A number of plates may be prepared, dried, and stored for use, and to be successful by this method great care must be exercised in cleaning the plates in the first instance.

The number of plates desired, whether flat or concave, should be procured and cleaned in a strong, hot solution of common washing soda. With a mop made by tying a piece of clean rag on the end of a strip of wood, well rub the plates over with this soda solution, rinse in clean water, then place them into a bath of muriatic acid, 3 ounces; water, 60 ounces. After soaking in this acid solution until the plates are cleaned, they must be rinsed singly in running water from a faucet, and the surface upon which the enlargement is to be made must be flowed over with the following preparation: albumen of one fresh egg, and water, 40 ounces; strong liquid ammonia, 1 drachm. This must be prepared beforehand, and well shaken in a bottle of the capacity of 80 ounces and filtered through two thicknesses of well-washed cheese-cloth. In pouring this mixture over the plate,

be very careful not to produce any air-bubbles. This may be accomplished by allowing the lower edge of the plate to touch the side of the glass graduate from which the albumen solution is being poured. The plates should now be placed in a clean rack to dry. When prepared in this manner the plates will keep well for two months in a clean and dry grooved box.

The next solution that will be required will be the sensitive emulsion, which is made up as follows:

Collodion Emulsion.

Pyroxylene (Gun Cotton) . .	80 grains.
Sulphuric Ether (sp. gr. 0.720) .	8 ounces.
Pure Alcohol (sp. gr. 0.820) .	5 "
Castile Soap	1 drachm.
Bromide of Ammonium . .	56 grains.
Bromide of Cadmium . .	56 "

Place the pyroxylene in a clean bottle with 3 ounces of alcohol, shake well, then add the ether. Shake until all the pyroxylene is dissolved. Add the two bromides to the remaining 2 ounces of alcohol, and when dissolved pour into the ether mixture, shake well, and add the castile soap cut into very thin shreds.

As soon as this mixture is in a state of solution it is ready to be sensitized, the sensitizing solution being prepared as follows:

Nitrate of Silver . . .	250 grains.
Pure Alcohol	2½ ounces.
Distilled Water . . .	2 drachms.

The nitrate of silver must be powdered and placed in a glass flask and covered with 2 ounces of alcohol and 2 drachms of water. Heat must now be applied to the flask, and a gentle shaking of which will complete the solution of the nitrate of silver.

The following operations must be carried on in the dark-room: Pour a little of the hot nitrate solution into the ether mixture, cork the bottle quickly and shake well; then little by little add the remainder of the hot nitrate solution, shaking well between each addition; rinse out the flask with the remaining half-ounce of alcohol, adding this also to the mixture, shake it vigorously, and allow it to stand for about twelve hours to ripen. At the end of this period there must be added another 30 grains *each* of bromide of ammonium and cadmium, dissolved in half an ounce of alcohol; the mixture must now be shaken well and poured out into a small, clean porcelain tray to set.

As soon as the ether and alcohol have evaporated the remaining emulsion must be cut into pieces with a bone knife and allowed to dry (all these operations must be conducted away from actinic light). When the shreds are dry they must be washed by tying them in a folding of cheese-cloth and suspending them in a stoneware crock or jar filled with clean water. This must be changed several times, so as to wash out all the *salts* of decomposition. The shreds may now be placed upon a clean blotter to take up all the surplus moisture, then placed in a darkened closet to dry. When dry the fluid emulsion can be made up by dissolving 24 grains of the dried shreds in 1 ounce of solvent made of equal parts of alcohol and sulphuric ether, and filtered through a loose tuft of absorbent cotton into a suitable, wide-mouthed, amber-colored bottle. The emulsion is now ready for use.

To prepare the plates take one of them and pour upon the albumenized surface some of the emulsion, allow it to flow all over the surface, then drain off the excess of the emulsion into the stock bottle, wave the plate gently in the air, then place aside to dry. Treat all the plates in the same manner, and as soon as dry they are ready for use.

Having the enlarging apparatus ready, place in the negative and focus upon the screen to the size required, place the sensitized plate in position, and expose. From a cabinet size head to 8 x 10 the exposure, with a good light and a rectilinear lens of about 13 inches focus and stop *f*/16, should be about one minute. Proceed to develop as follows, these solutions being all made up previously:

1.—Pyrogallic Acid . . .	192 grains.
Alcohol	2 ounces.
2.—Bromide of Potassium .	20 grains.
Water	2 ounces.
3.—Carbonate of Ammonia .	6 grains.
Water	3 ounces.

To develop take 10 minims of No. 1, 4 minims of No. 2, and 1 drachm of No. 3; take the exposed plate, rinse it carefully under the faucet, drain the plate slightly;

then pour the developer over the plate, not in a tray, but at one corner or outer edge by the thumb and finger of the left hand; then rock the developer over the plate to and fro until the image makes its appearance; then add 8 minims of No. 2 and 2 drachms of No. 3; mix this with the developer on the plate, and continue development until the image is well out; throw off the developer, wash the plate gently under the faucet, and fix in a solution of hyposulphite of soda, 2 ounces; water, 6 ounces. As soon as fixed wash in a gentle stream of water for half a minute, then place in a rack to dry. When dry the plate should be varnished with any good clear photographic varnish and dried; the picture will present a brown-black when backed up with either a white or pink backing, and may be colored with thinned-down oil colors, so that they are of a semi-transparent character. The concave oval glass forms a complete tray in itself during the developing process.

STUDIO ADVERTISING.

BY W. I. SCANDLIN.

IV. Do it Now.

The close of the year has come to be looked upon as a time to make new resolutions and to lay out plans with which to start on the new year. If this old time custom is to prevail among photographers, the writer believes that no better resolution can be made for the new year than the determination to lay aside on the first day of January a certain, definite amount of money for the express purpose of exploiting the business of the studio during the succeeding twelve months. If some such definite plan as this be adopted and the appropriation religiously held for the purpose to which it is dedicated, the photographer may look for something positive and tangible from his advertising campaign. Unless such a course is pursued he will continue, as he has done in the past, to advertise spasmodically and ineffectually, if at all, with the result that his business will continue in the same old lines or possibly be wiped out by some bright and energetic newcomer with a larger appreciation of the necessity of publicity;

Procrastination has been a fault in our business for many, many years and it is easy to promise one's self that certain reforms shall be instituted next week or next month. The proper time to institute reforms is the present, and when it becomes apparent in any business that a change is desirable procrastination means a positive loss of money value to that business.

It is a matter of common practice in the fraternity to "blow in" more or less of the proceeds of the holiday work each year. This custom seems to form a part of the business regime in very many of our studios. If however this amount alone or even a fair proportion of it can be laid aside for the publicity of the studio during the next few months, a marked improvement in the business of the studio will result. Why not start the new year with the definite purpose of spending a specified amount of each month's income for the advertising of the studio, counting it as one of the regular stated expenses, just the same as rent, fuel, or light? Let the policy to be followed in the expenditure of this money be carefully thought out, so that every advertisement shall be made to count to its best advantage. Before the winter's business is completed the outlay will cease to have been felt as a burden. The impetus that such a policy will give to the work of the winter and spring ought to be felt well into the summer. When the dull times come the advertising should be framed to create a demand for special work to serve as a filler-in; such, for instance, as the copying of old and faded pictures and daguerreotypes, enlarging and finishing in special styles, or the working up of orders from old negatives, which in many cases can be made to pay a good profit on the cost of storage and indexing. All of these things will be treated of in detail later on, but the whole policy of advertis-

ing should be framed with the view of exploiting different classes of work at different seasons of the year, when they can be fitted into the routine of the work of the studio to the best advantage.

Get the public into the way of expecting a new announcement each week and it will be found profitable. The announcement of one week will have direct interest to a certain limited number of its readers, while that of the next will touch a totally different class, and so on during the year. Every field of the studio business should be covered during the fifty-two weeks, and every possible change rung on the preparation of the announcements themselves. The thought that presents itself for the immediate future, and one which should gradually be led up to during the next few weeks, is that of Easter, and the studio with an advertising policy will see to it that its advertising matter is framed with reference to the Easter season as the children's season. A careful selection should be made of the best child pictures of the last few months for grouping and exhibition before the Easter season. As a special Easter possibility, there is good business in this, as many a photographer knows, and there are many photographers who follow this plan every year. Invitations may be issued to attend this reception, or it may be announced by booklets, or by regular newspaper advertisements. It may, however, be simply exploited by word of mouth from customer to customer, but an exhibition should be made along these lines, and there is scarcely a studio in the country doing any kind of a business that may not make it pay.

In all work executed during the winter, it will be well to keep in mind the thought that occasion will probably arise later on for one or more choice specimens for halftone reproduction. Keep this thought always in mind, and in making sittings try to arrange for permission to use one or more if required. They will have value as illustrating the quality of work you are turning out. Two or three dainty child pictures prepared with special reference to this purpose should always be available for newspaper cuts, or better still, for special announcements for distribution at different seasons and in various ways. Pictures of this kind are impossible to get in a hurry, and should therefore be prepared in advance for emergencies.

NOTES ON ARCHITECTURAL PHOTOGRAPHY.

BY HENRY C. DELERY.

A BRANCH of architectural photography in which the photographer has ample opportunity to display his ability is the reproducing of monuments, statuary, and the like. As in this class of work one is not very much restricted as to space, a long-focus lens should be used, and a point of sight obtained at a sufficient height to give pleasing perspective.

For statuary or small monuments a point of sight at an ordinary distance will suffice; for statues on high pedestals the camera should be placed at a remote distance from the object. The surroundings should receive special notice, even more so than with the usual architectural subject, and everything that can excite interest in the picture brought into view. The background in particular must be suited to the subject—*e. g.*, white statuary, when photographed in the open air, should never have a clear sky as a background, while, on the other hand, bronzes and dark subjects require a background which has a brighter hue. In fine, to properly photograph monuments and statuary we must give the subject all the care and study which the portrait photographer bestows on his sitter.

Experience shows that for this character of work the best results are obtained in cloudy weather, when the rays of the sun are partly obscured, or even in the shade. By making the exposure in subdued sunlight, not only is the modelling and rounding of the subject rendered better, but greater softness and delicacy of detail are secured. If the subject be a piece of

statuary, and we attempt to photograph it under the unobstructed rays of the sun, the shadows cast under the eyes, nose, and chin will be very harsh, and the delicate modelling of the picture will be lacking.

Another important branch of architectural work is the reproducing of structural details of buildings, and such other work as may be required for the actual execution of the building itself. A building may have to be altered or repaired, and a photograph demanded to show the exact existing conditions.

In a case of this character it is best to reproduce the building on a scale, in order that the draughtsman may be able to obtain his proportions and dimensions to lay out his drawing.

A position is taken directly in front of the building and as far removed as is possible, in order to reduce the perspective to a minimum. A batten, say about two inches wide and ten feet long, having each foot-space marked in plain figures, is set on the wall of the building. This will serve as a future guide to the draughtsman when scaling the photograph, and will also be the means by which the photographer will establish his scale when focusing the picture. The camera is set up, and, by applying a draughtsman's scale on the ground-glass, after shifting the camera to its proper position, dimensions corresponding to those marked on the building will be obtained on the scale. In other words, if the foot-marks on the batten measure one-eighth of an inch on the ground-glass of the camera the photograph will then be on a scale of one-eighth inch to the foot.

This method is also commendable when photographing manufacturers' details, such as panels, ornaments, moldings, caps of columns, etc., which are sent out as samples. The principal feature in this class of work is to avoid all perspective, in order that the photographs may be scaled accurately.

Still another important task for the architectural photographer is making a record of an edifice as its construction progresses. In this instance a truthful representation of the building is absolute, and still further steps must be taken to verify the truthfulness of the reproduction, as photographs of this nature may be used to settle contentions in the courts.

If the photographer is required to follow the history of the building from its conception to its completion, the first step should be to photograph the condition of the adjoining buildings, which, from various causes, may be in bad condition, such as cracked or decayed masonry, walls out of perpendicular, and the like, and which, if not photographed previous to the demolishing of the building, may involve the owner or the architect in serious trouble. For a wall which is out of perpendicular the camera is set up with its swing-back absolutely plumb; on the building itself a plumb-line is dropped from the top of the wall and held free against the batten with foot dimensions marked on it; in this manner the distance from which the wall is out of perpendicular is plainly visible and cannot be disputed. It is also well for the photographer to have his notebook at hand and record all data which may be of importance.

When the time of erection begins a weekly photograph should be taken of the premises, and, if the building be a time contract, the date should be plainly marked on a sign which is included in the view. This will save considerable contention at a later date and make the photograph convincing in itself. For a high structure it is well to mark the number of the floor on the date sign. When the structure is finally completed the architect has a record of his building which may be of inestimable value for future reference.

Architectural drawings may have to be copied, and here the architectural photographer enters a new field. Perfect accuracy must again mark his work. We will first study the drawings. These are often made on rough surface paper, and it is desirable when setting them up that the light should strike the paper from all directions, thereby doing away with shadows, and, to a great extent, preventing the rough grain of the paper from showing. As the designs and plans prepared by architects are drawn to a scale, it is well when reproducing them to see that the scale-unit is preserved, and, if possible, to reduce to some convenient scale generally employed by architects. If there be no

scale marked on the plans a line should be drawn with inch-marks and foot-marks figured upon it, so that the draughtsman can, if necessary, decipher the drawings.

For general outdoor work on commercial buildings I have found the ordinary unorthochromatic plate quite capable of giving good results, and for this work would recommend a fast plate which will enable us to photograph even non-actinic buildings instantaneously on crowded thoroughfares. Naturally the latitude in exposure is greatly reduced, but one soon accustoms himself to the speed of his plate, so that exposure soon becomes of secondary importance. Another advantage of the fast plate is that it permits of the use of a very small diaphragm—an item of considerable importance in architectural work, where a great amount of detail and clearness is always required.

For a higher class of work where color and tone effects are desired, the orthochromatic plate is advised. The principal benefit derived from its use besides the true rendering of color luminosities, is a more brilliant negative with better detail and a clearer rendering of distance. For monuments and similar views, where the natural scenery or a sky silhouetted with clouds is intended to embellish the picture, an orthochromatic plate is indispensable.

FINISHING BROMIDE ENLARGEMENTS.

BY C. H. HEWITT.

PORTRAIT negatives are usually made for contact printing. The steepness of the scale of gradation is therefore arranged for the printing process employed. If thin, delicate negatives are produced suitable for print-out-papers they will also be suitable for enlarging on bromide paper.

But platinotype, carbon, and collodio-chloride platinum-toned printing methods require negatives of greater contrast, and such negatives tend to give harder enlargements. The high lights of such enlargements are deficient in gradation or modelling, and this deficiency must be supplied by finishing. Or, on the other hand, if the exposure and development of the enlarged print are so adjusted that the high-light detail and gradation are present, the shadows will be overexposed and lacking in brilliancy. In the majority of cases a happy mean is hit, and a little strengthening of the shadows with, at the same time, a little work in the lighter portions is what the finisher is called upon to do.

There are a proportion of inferior negatives, and, of course, copies from old and faded portraits, and in the case of enlargements from such the brushwork is put in to take the place of detail which should have been there, but is not, either from the inferiority of the negative or the fading of the original. Finishing, then, is necessary to remedy the defects in the plain enlargement from whatever cause they may exist.

A lead-pencil has been used for finishing small prints on a smooth bromide paper. Its chief drawback is the tendency to shininess wherever it has been applied. If, however, a hard pencil be employed, and very little work requires to be done, this will not be very apparent.

With crayon there is no shine, but it is not always easy to obtain an exact match for the color of the bromide enlargement. Crayon is useful, however, when the picture is finished by cross-hatching.

Crayon-powder is finely-powdered crayon which may be applied to comparatively large surfaces by means of cotton-wool, a hog-hair brush, a stump, or a pad of wash-leather.

The most useful form of water color is the cake color. For monochrome finishing, Indian-ink, tempered with indigo for black prints. For sepia-toned bromides it will be necessary to use Vandyke brown or burnt umber, and match the color of the print by adding Indian-ink.

For brushes two or three sable pencils will be necessary, and they should not be too small. When selecting care should be exercised. A brown sable is as good as a

red and less expensive. Rowney's No. 6, in German silver, and a No. 3 will be sufficient for most work. See that the brush on being wetted and drawn over the side of the glass springs readily to a good point. Then work the point upon a piece of clean paper, and note if the hairs keep together. They should do so if the brush is a good one.

A good knife is very useful for scraping; it should be very sharp. A surgeon's lancet is a useful tool; with it dark patches may be scraped down, and require a minimum of brushwork afterward. The rubbers should be of two or three kinds; a piece of soft, black bottle, india-rubber, a piece of harder ordinary rubber, and a piece of ink-eraser which may be sharpened to a point and used for picking out lights after rubbing in with the powdered crayon.

Pumice powder will be found very useful for reducing large shadows which may be too black. It is applied with the ball of the finger, or with a small pad of linen rag.

Let us imagine that we have before us a vignetted bromide enlargement which is to be finished. It will be better to commence with a picture which requires only a little work. After confidence and experience are gained copies and other prints requiring more work may be attempted. We shall first get the background right. The vignette may not be quite so satisfactory as we could wish, and requires a little softening off in clouded masses. The paper will probably be slightly rough.

Smooth bromide paper should never be used for enlargements requiring finishing. Lay the print, which is, of course, mounted and quite dry, flat on the table, dust a little pumice powder over it, and rub very lightly over the whole surface with a pad of linen. An old handkerchief rolled up into a ball answers well. Do not rub too hard or too long. Then dust off all the powder. This will have removed the gelatine from the top of each little irregularity of the paper surface. Next take a little of the stumping sauce; scatter it on a piece of wash-leather stretched with drawing pins or tacks on a smooth board. Roll up a bit of cotton-wool to the size of a walnut, and rub it on the wash-leather; it will pick up some of the stumping sauce. To avoid putting too much on to the enlargement, and so making a black patch, rub the cotton-wool first on a piece of blotting-paper, and note the effect.

Then commence on the enlargement, rubbing lightly and getting an even shading, lighter and lighter as you work away from the shoulder and face. If some of the powder gets on to the face, it does not matter; it can be removed afterward by means of the soft india-rubber, working close to the outline of the face with the india-rubber sharpened to a point. When the clouding of the background appears satisfactory, very lightly dust off with a clean piece of cotton-wool any of the crayon powder which may be loose. Now take the rubber and remove the applied powder in places so as to accentuate the cloud forms. The introduction of clouded patches may sometimes be done in just the same way with solid enlargements. This clouding may be done by washes of water-color, but this is more difficult.

Any lace or light drapery which is lacking in detail may be rubbed in with the stumping sauce in the same way, and the high lights picked out with pointed rubber. Care must be taken not to rub in too dark. The effect is usually better than when the white body color is used for drapery high lights. Drapery which is "out of tone" —that is, too light in relation to the flesh or other parts of the picture—may thus be readily put down and made much more harmonious.

To prevent the rubbed-in sauce from smearing, it is necessary to soften the gelatine so that it may be held on. Pour some nearly boiling-water into a tin tray. Cautiously hold the enlargement face downward, so that the steam reaches it evenly, moving the print about. If the water, and consequently the steam, be too hot, the gelatine may melt, or, at least, appear glossy in patches. All that is necessary is that the surface of the bromide should get a little moistened; the powder then adheres to the sticky surface. Allow the print to dry, which it will do in a minute or two.

Brush-work and spotting now may be commenced, and it must be borne in mind that after applying color with the

brush no more rubbing-in with powder may be done, as the powder adheres more freely to such parts. Lightly spot out any defects, resting the hands on a piece of clean white paper. Any marks where the crayon powder has been accidentally removed against the outline of the face may also be spotted in.

Then turn the attention to the face. It will probably be found that retouching shows, and that there are a number of light little spots. The whole surface of the face may be carefully stippled in, stippling consisting of little more than fine spotting of the small irregularities. Do not get too close to the work, or the effect will be patchy.

An alternative method is that of cross-hatching or shading. This may be done with the brush and color or with a pointed crayon. The lines should be drawn so as to suggest the direction of the grain of the skin.

It will most likely be found that on examining the picture now the shadows will look weak. Sometimes when very little work is being done the principal shadows are given a wash of gum-water, which slightly glazes them and increases their brilliancy. It may be necessary to strengthen them with color also. In this case do not add too much gum; the effect of very gummy shadows is inartistic. The eyes, eyebrows, line of the lips, and nostrils will all require emphasizing a little; but it is better to do them gradually, noting the effect as you go on, than to work them too heavy and black. Shadows in the hair should be put in with broad strokes. Never try to draw single hairs.

In all finishing it is necessary to know when to stop. It should always be remembered that a photograph is a representation in *tones*, and if a great deal of cross-hatching in the background or on the face and drapery is done the result becomes hybrid in appearance. The less the finishing shows the better will the portrait be. The same applies to excessive glazing of the shadows, and more so still in the case of Chinese white for high lights. Always take care not to lose the drawing. It is very easy to do so, and then the likeness is gone.—*The Practical Photographer Library Series*, No. 2.

STAGE FOLK.*

BY LAWRENCE F. TERKELSON.

To keep pace with the rapid development of modern photography requires all that "strenuousness" of application that President Roosevelt has made the American watchword, but in no branch of the art is the operator's skill more severely tried than in portraying the professional folk of the stage.

The great restless public demands novelty from its stage favorites. The stage favorites in their turn demand novelty of the photographer. It is here that Greek meets Greek. In the bright lexicon of both, the golden rule is to please their subjects every time—all the time, with the added difficulty on the side of the photographer that he must not only please the stage favorite, but tickle the fancy and stimulate the curiosity of the fickle public. This requires a special knowledge not only of photography and the art of securing attractive poses, but of the very latest developments of stage-craft itself, and that more uncertain quantity, of just what the newspapers and magazines want and do not want. What they do not want is of the greatest importance to both the actress and the photographer, since the paper is the quickest, surest, and best advertising medium for both. Indeed, all pictures of stage folk nowadays are made not so much for the actress and her admirers, as to win the space in the newspaper columns, for all such advertising is the biggest asset in the success of a stage favorite.

Every actress knows this. The editors of the great papers and magazines know it even better. The photographer is expected to do more than the lion's share in bridging the difficulty between them.

* From the Convention Souvenir of the California Photographers' Association.

Thus it has come about that mere portraits will no longer suffice. To be successful on the stage, the actress must do something new, novel, and attractive. To be successful with the actress, the photographer must show what that something new and novel really is; while both, to be successful with the papers, must display it photographically as attractively as the actress enacts it behind the footlights.

On the part of the operator this means a combination not only of the photographer's skill, but of the stage favorite's art and the editor's craft as well. The operator must know what poses make attractive pictures, and what lightings and paper and printing make the best half-tones. This is a problem, since no two papers are equipped to print half-tones equally well, and pictures that will not look sharp and clear and pleasing in print will not be accepted, no matter how catchy the poses, nor what is more, how famous the actress. The actress knows to the last wink of an eyelash how she produces her most fetching effects on the stage. If she knew how to get the same results before the camera, nothing would be easier than the photographer's work. But she doesn't, and the very points of her act which bring success would be lost unless the operator knows enough of stagecraft to fill the part of stage manager in the studio. Let me give a few notable instances of this peculiar fact:

A few years ago Mlle. Alexandra Dagmar, a Russian prima donna, came to San Francisco. In Europe she was well known and popular. In the West here she was absolutely unknown. The management under which she appeared, knowing her reputation abroad, advertised her extensively, illustrating the articles with small cabinet photographs, mere portraits, which were the only pictures she had supplied. Mlle. Dagmar, on her arrival, proved to be a woman of heroic proportions, and with a wardrobe to set the feminine hearts athrill with envy; all that costly advertising was wasted. For the first week of her engagement Mlle. Dagmar attracted no more than passing attention. She was a celebrity of more than passing fame, however, and early in the week she was invited to the studio for a sitting. She came much perplexed over the poor reception her audience had accorded her, and not much disposed to sit for pictures, declaring it was time and money wasted.

At first glance she was imposingly beautiful. In stage costume she was nothing short of stunning. The cabinet pictures that were published gave no idea whatever of her Junoesque splendor. Though she again ordered cabinets, I resolved upon a few big pictures at once, and concentrated every effort of background and other settings toward exaggerating, if anything, her magnificent height and the dashing quality of her Amazonian poses.

On the following Sunday she was blazoned for full-page stories illustrated with full-page pictures, as "the most stunning woman in vaudeville," in two of the big rival newspapers. Those big pictures alone proved to be the foundation of a greater popularity and wider fame than she had ever gained before.

In like manner the Aglos came here unheralded and quite unknown, for all that they were wondrously clever and original, though that fact would never be suspected from their pictures.

The piece de resistance of their bicycle tricks was spectacular in the extreme. While the two male Aglos balanced on their hands on high pedestals, with feet swung skyward, and held in their teeth the ends of a slender wire, Mme. Aglos, mounting a bicycle, calmly rode back and forth along its length, and then stopping in the middle, swung herself about as calmly as though the wire was held by steel stanchions. When they came to the studio it was for the usual groups, which the newspapers have long ago ceased to publish.

They were induced to reproduce their bicycle feat before the camera, which was no easy task, as much rigging had to be done, in order to hold them steady while the exposure could be made. The finished picture was an exact reproduction of their act; it not only secured them extensive advertising, but brought them offers of engagements from all parts of the country.

The Crag family, progressive acrobats, came without any pictures at all and a distinct prejudice against the photographer's art, which they claimed was entirely in-

adequate for showing the rapidity and daring of their work, which was bewildering and highly sensational in the extreme. The secret of procuring a large order from them was to actually reproduce their act photographically, which meant newspaper space in quantity. This was done by taking each step of each feat separately, and finally joining them all together in the finished pictures.

More difficult still to obtain were the Parros Brothers. The particular feature of their act was the balancing of the younger Parros on his head, feet upward, on the top of a ten-foot pole supported on the chin of the elder Parros. It was a feat without parallel in vaudeville, and the wonder was that they had never secured pictures of it before. Like the Crag family, they did not believe it could be done, but it was done successfully in this wise: The elder Parros was photographed with the pole on his chin. The younger Parros was caught on another plate while he stood on his head on the floor. On the finished picture the two negatives were joined so skilfully that it looked like one negative. The picture was large enough to extend down the full depth of a page, and caught the eye and held attention at once.

All of this does not mean, however, that portraits cannot be used. They can, but they must be striking, novel, and original.

For instance, you could not photograph Maxine Elliott in any of the airy nonsense of the ballet girl. Her personality is first, last, and all the time sweetly, delicately, ofttimes sadly pensive, and wholly feminine. Until she came to California she never had anything larger than a panel picture, nor anything more striking than a simple portrait in meaningless drapery. No one had ever thought to photograph her in scenes and costumes from her plays and to make the pictures large enough to command attention.

The success won with Maxine Elliott brought such notable women as Mrs. Leslie Carter, Margaret Anglin, Blanche Bates, and Nance O'Neil, etc.; and the same method, that of finding out what each of these women did best on the stage, and reproducing that photographically, made their pictures notable from one end of the country to the other. You can calculate for yourself the value of such widespread advertising of the operator's work to the photographer himself, and how quickly he would gain something vastly more than a local fame.

In concluding, let me state that the papers desire and insist upon clear, sharp prints, and first, last, and all time—action, action, action. And what the papers want the public wants, and what the public wants the professional folk want in an added degree. Therein is the secret of success for all three, and for the photographer in particular.

THE PERSULPHATE OF AMMONIA REDUCER.

BY G. WATMOUGH WEBSTER.

After many conversations with friends, professional and amateur, on the reduction of negatives by solution of persulphate of ammonia, I have been surprised to find how large a proportion of them never employ this agent. I am referring, not to those exceedingly clever people whose negatives are always perfect, and who never require such adventitious aids as reducers or intensifiers, but to the everyday worker who is as liable as anyone who is not a photographer to occasional errors of judgment, Even among these the persulphate was to many quite an unkown factor in photographic technique. It is rather singular that this should be so, seeing that Mr. Howard Farmer's reducer is known virtually to everyone, though one must not forget that the latter has been known for a much longer time than the chemical which I am discussing, and which is now readily obtainable at most dealers in photographic chemicals. When I first experimented with the salt it was difficult to obtain, and I was strangely led astray by the seller, who informed me that it was an acid sul-

phate instead of being, as its name implies, a salt of persulphuric acid. In an account of those experiments I pointed out that in a hard negative, reduced by the then known reducers, the tendency was for "the lighter tones to be eaten away at a more rapid rate than the thicker deposits, with the consequent tendency to increase the hardness"; but that "with the persulphate this does not take place: the image may be reduced to less than half its original density, or even to a greater degree, and yet, if there be a difference, it will be toward increased softness." I had made an important discovery, but, as is now well known, this was an understatement of its valuable peculiarities, the high lights being reduced far more rapidly than the halftones.

But why should there be such general want of practical acquaintance with this reducer? To some extent it may be credited to the natural conservatism of photographers, who, getting into a groove and finding it leads to success, are disinclined to abandon or alter any of their methods, a frame of mind, unfortunately, opposed to all progress. There is, however, another probable cause which I shall endeavor to elucidate. In my first experiments alluded to I described the liability to erratic staining in negatives reduced by persulphate; but many others failed to experience this difficulty, which is a sufficiently surprising fact, as I never make a statement about my own practice without careful consideration, and my continued experience bears out what I then said. However, since the time when I first made discovery of the peculiar value of the persulphate, it has been a regular occupant of my laboratory shelves—in crystal and in solution—and I nave been able to systematize its apparent vagaries. That in various hands its action has been irregular is proved by the differing recommendations as to the strength it should be made up to. We have had all the proportions given from 1 to 10 per cent. With a uniform preparation there surely should not be such variations as this, even when we take into consideration the different requirements of professional and amateur. The latter, with fewer negatives to attend to, will think nothing of spending half an hour over a negative which he values. A professional, whose time is money, would scarcely like to spend more than five or ten minutes over reducing a batch; further, if longer time, say half an hour, were required, the exigencies of business might tempt him to leave his negatives for a time, and possibly cause him to forget them till the reduction had gone too far. Hence, a method which should require on an average about ten minutes may be looked upon as one to be aimed at.

We have had recommendations to use the persulphate in neutral, in alkaline, and in acid condition. Here lies the crux. Let me at once say that the probable cause of all the varying opinions on the action of this chemical is to be found in its greater or less state of acidity. And this is not all. The solution, from the moment it is made, decomposes, and gradually becomes more and more acid; a good commercial sample of the salt has a slightly acid reaction to start with, but this quickly increases.

An entirely freshly made solution has but a slight action, and may be used at 10 per cent. strength with safety.

The same solution, after the lapse of a month, has a very strong action, and at 1 per cent. acts more quickly than the new 10 per cent.

That these statements may not be considered too strong, I may say that I have made a large number of experiments with solutions of various ages and strengths, and after most careful tabulation of results these figures are given as absolutely reliable, as witness the following extracts from my note-book:

If the solution be made with ordinary "tap water," which usually contains chlorides or carbonates, the action of the chemical is quickly seen by a milkiness on the surface of the negative. This is so convenient a guide that I always use such water for the purpose.

Fresh 1 per cent. solution. No change in half an hour.

One day old, ditto. Seven minutes before milkiness supervened; thirty-five minutes, very much reduced; one and a half hours, image almost gone.

Fortnight old, ditto. Milkiness in five minutes; half-hour, greatly reduced.

Three months old, ditto. Milkiness in two minutes; sufficient reduction in ten minutes.

There is another point to notice. With old solutions the color of the reduced negative is changed to a rather sickly sepia tint, adiactinic, but unpleasant-looking. With a one-day-old solution the following is not nearly so great, and the negative is not so objectionable in color.

The facts show the persulphate to be so irregular in action that if they were not well impressed on the worker's mind he might find the use of persulphate too uncertain, and throw it up. These data will help to obviate such a result.

Many will perhaps say they would not care to employ so changeable a material. With that idea in view, I instituted a further series of experiments to get uniform action. If anyone should take the stopper out of a bottle which has held the solution some weeks, he will notice a strong odor, more like that of nitric acid than anything else, this being concurrent with the development of an acid reduction in the solution.

I made three separate batches of 1 per cent. solution, and at once acidified them with respectively 25, 50, and 75 per cent. nitric acid (sp. gr. 1.42). The result was precisely like that with very old solution. The 25 per cent. was only just within manageable action; the 75 per cent. almost dissolved the whole image in under ten minutes. When nitric acid was added to new 1 per cent. solution which had been on the negative for half an hour it was singular to note that the negative remained unaltered, though a piece of the same plate (cut off when dry) immersed side by side with the one just named, became reduced in a short time. Nitric acid being a corrosive liquid, which many workers may not care to handle, I tried the effect of the more familiar citric acid; but the result was not encouraging, the time needed to bring about reduction being considerable.

The practical outcome of these experiments would be the following recommendations:

Keep a stock solution of, say, 10 per cent. (to be let down to 1 per cent. when required for use), and note on the bottle the date of making. The worker will know what to expect. If this is considered wanting in uniformity the following would take its place (but few photographers like to bring out scales and weights for a simple operation): Make a fresh 1 per cent. solution, and add nitric acid in the proportion of one-tenth part of the persulphate present. It is better to keep a stock diluted nitric acid, say 10 per cent., to carry out this recommendation with ease. The data I have given will enable anyone to use this invaluable reducer with ease and certainty.

I conclude with the reminder that the moment the negative is reduced sufficiently it should be placed in a 10 or 20 per cent. solution of sulphite of soda, and allowed to remain for, say, ten minutes before washing thoroughly.—*British Journal of Photography.*

TONING BROMIDE AND GASLIGHT PAPERS.

BY A. A. MACDONALD.

THE recognized color of bromide or gaslight prints is a neutral black with pure whites, but there are occasions when a color is desired which will lend itself better to certain subjects and add to their general harmony.

The color of the image may be somewhat modified by variations in the exposure, and in the composition of the developer, but it is the toning methods only which will be here considered.

The blacks of prints which are of a rusty color from errors in exposure or development may be transformed into splendid blacks by simply toning for a few minutes with gold and sulphocyanide after the prints have been fixed and thoroughly washed. Longer toning gives blue-black. The following formula is the most suitable:

Ammonium Sulphide . .	20 grains.
Gold Chloride	2 "
Water	10 ounces.

Very prolonged toning or too strong a bath tends to yellow the whites; a few minutes' washing after toning will suffice.

In a hypo-alum bath the blacks are changed to a warm black and then through various warm shades to a red sepia, according to the length of time in and the temperature of the bath.

Hypo-Alum Bath.

Sodium Hyposulphite . .	1 ounce.
Alum (powdered) . . .	60 grains.
Water	10 ounces.

Dissolve the hypo in boiling water, add the alum and stir occasionally until dissolved. A light-colored precipitate will form, which should not be filtered out, but be shaken up when the bath is to be used. The bath works better when at least a day old, and improves with use. It should be replenished from time to time as required by the addition of fresh solution of double the usual strength. Its temperature should run from 120° to 150° F., or as hot as the fingers can bear it. The dish containing it should be kept hot by placing it over a gas or oil stove. It is preferable to stand the dish containing the toning solution in a larger dish of hot water, with two thin strips of wood under it to keep it off the bottom. This gives a more equable temperature, and prevents uneven toning. Enamelled iron dishes are very suitable for this work.

As this toning bath has a reducing action the prints should be considerably deeper than the final results are required, and the more they are to be toned the deeper should they be printed. The prints should be fixed, thoroughly washed, then alumed, and after a slight further washing be placed in the toning solution. The solution should not be too hot when the prints are first placed in it, or the film may be injured, but the temperature may be raised as soon as they are in. The alum bath can be dispensed with if the prints are put into a cold toning solution and allowed to soak for about five minutes before the solution is heated. Toning takes from ten minutes to an hour, according to the temperature of the bath and the tone desired. A cold bath would need as many hours as a hot one would minutes. When toning is completed, it is advisable to transfer the prints to tepid water, or a tepid solution of alum, for a few minutes previous to washing them in cold water, or each print may be cooled by exposing it for a few minutes to the air. Rough papers are the most suitable for the tones procurable by this method, and are sometimes improved if the whites are slightly tinted by soaking in a cold solution of coffee after toning.

Another and quite different form of toning is that in which salts of uranium, copper, and other metals are used. With these almost any color can be obtained, most of the colors being very beautiful, though in some instances they are too brilliant to be really artistic. The black silver of the print is replaced more or less by the colored ferrocyanide of the metal used. The most useful baths can be made from the following solutions—the mode of using them being explained farther on:

Ferricyanide Solution.

Potassium Ferricyanide. .	30 grains.
Acetic Acid	½ ounce.
Water	10 ounces.

The ferricyanide should be in clean red crystals, if discolored they should be scraped or slightly washed and dried on a clean cloth before being weighed out. The solution will keep in good condition for a few weeks.

Uranium Solution.

Uranium Nitrate	30 grains.
Acetic Acid	½ ounce.
Water	10 ounces.

Iron Solution.

Ferric Ammonium Citrate .	30 grains.
Acetic Acid	½ ounce.
Water	10 ounces.

Copper Solution.

Neutral Potassium Citrate .	¾ ounce.
Cupric Sulphate	35 grains.
Water	10 ounces.

It is advisable to keep these solutions, or mixtures of them, in the dark, and toning should be carried out by feeble daylight or artificial light.

Prints to be toned on the following baths must be thoroughly washed after fixation, and preferably alumed, although this is not a necessity. The alum destroys any chance trace of hypo, but a short immersion in a solution of one drachm of nitric

acid to ten ounces of water, with a little washing afterward, does this quite effectually, leaving the print chemically in an absolutely clean condition for the toning reactions. Any fog in the lights should be cleared away by short immersion in a very weak solution of hypo and potassium ferricyanide, the print being then thoroughly washed. An amount of fog that would be hardly noticeable in an ordinary print would be very conspicuous after toning.

Uranium with ferricyanide gives a range of tone from warm black through the sepias and browns to red. The uranium intensifies the prints considerably, and the further the toning is carried the deeper will be the results. The most suitable print would, therefore, be much lighter than usual, with full detail and no hardness. Toning only occupies a few minutes. Almost any proportions of the uranium and ferricyanide solutions will give a range of warm tones, but the best sepia is obtained by mixing two parts of the uranium solution with one part of the ferricyanide; brown, with one and a half parts of uranium to one of ferricyanide, and red, with equal parts of each.

The solution should only be mixed when required for use; it will tone until exhausted, or till it becomes turbid.

After toning, the prints should be washed until the yellow stain caused by the ferricyanide has been cleared out of the whites. Water should not be allowed to play on uranium-toned prints, as uneven tones may occur from the tone being more washed away from one part than another. Ordinary water being often slightly alkaline, and the uranium image being soluble in even extremely weak alkaline solutions, the washing water should be made neutral by adding a drop or two of acetic acid to each twenty ounces of it. This will prevent the uranium image from being washed out with the ferricyanide stain. When this is not done, the print will have to be toned further than is ultimately required, to allow for the loss.

The yellow stain may be very quickly removed, and the image made a little lighter, but more intense in color, by immersion, after toning and rinsing in water, in a solution of five grains of ammonium sulphocyanide to an ounce of water.

The uranium image may be entirely removed by prolonged washing in ordinary water, which leaves the image as it was previous to toning, but somewhat lighter, according to the extent to which it was toned. This may be taken advantage of by washing a print which has been overtoned, until the tone is reduced to that desired; allowing a little for the print's drying rather colder and darker than when wet. The toned image may be immediately removed by immersion in a weak alkaline solution, such as ammonia or sodium carbonate.

For blue tones the prints should be of the usual depth, as the toning makes little difference. These tones are easily obtained in a few minutes by immersion in equal parts of the iron and ferricyanide solutions. For a blue-black, the solution may be diluted from three to six times. After toning, transfer the prints, without washing, to ten ounces of water. Then wash in ordinary water until the yellow stain is entirely removed. The blue image is not nearly so soluble in ordinary water as the uranium one, although very prolonged washing will eventually remove it. An alkaline solution will immediately eliminate it.

Blue-green tones are obtained by immersion in a mixture of equal parts of the uranium, iron, and ferricyanide solutions, variations in the quantities of these solutions giving slightly different results.

The best method of obtaining greens is to tone the prints to a reddish-brown or red in the uranium and ferricyanide solution, and then remove the yellow stain by washing in ordinary or neutralized water. The sulphocyanide clearing solution must not be used. When the whites of the print are clear, place it in a solution of forty grains of ferric chloride to ten ounces of water, until the green tone is obtained. Forty minutes of the strong solution of ferric chloride may be used instead of the solid if the solid is not readily procurable. It is best to wash green-toned prints, first in water acidulated with acetic acid, and then in neutralized or ordinary water. Care must be taken not to wash out the uranium image and leave the blue one, the former being more soluble than the latter. Variations in tone

depend more upon the extent of the uranium toning than on that of the ferric chloride, although the degree of toning with the latter has also some influence. Prints for green tones should be about the same depth as those for uranium toning.

The colors obtainable with copper and ferricyanide toning, like those with uranium, range from a warm black to red, but they are of a different type. Those with copper are softer and more agreeable, with the slightest purplish tinge throughout. The reds are more like red chalk, and are not so fiery. A little deeper print than usual is required for this method; the more red the print is to be toned, the deeper must the printing be. Equal parts of the copper and ferricyanide solutions should be used. Toning is a little slower than with uranium. After toning, the yellow ferricyanide stain is washed out in ordinary water. The image is not soluble in ordinary water, therefore no precautions are necessary.

Ferricyanide-toned prints, particularly uranium ones, should have the surface water blotted off them previous to placing them to dry, otherwise pools or beads of water on them will affect the evenness of the tone. The utmost cleanliness is imperative; the hands and dishes must be carefully washed between each process. With regard to the permanence of toned bromide prints no definite statement can be advanced, but it is certain that the care with which the print is made and toned has a considerable influence on its durability.—*Photographic Scraps.*

NEWS AND NOTES.

The American Annual of Photography for 1904, edited by Spencer B. Hord, and published by the Anthony & Scovill Co., New York, is now ready for delivery. As in past years, the volume offers a generous variety of useful papers on photographic subjects, and over 300 illustrations, reproducing the selected work of many prominent amateurs and professionals. Mr. Hord has accomplished the difficult task of surpassing previous issues of the *Annual* with remarkable success. The articles are well chosen and cover many different branches of work; the illustrations are distinctly high in average quality and well printed. The frontispiece is a portrait printed on Cyko paper and finely displays the qualities of this popular paper. Price, paper covers, 90 cents, post free; cloth bound, $1.45, post free.

According to the report of the Texas Convention, held at Fort Worth, September, 30, and published in the *Southwest Photo* for November, a proposal to hold the convention once every two years was negatived, and the meeting will be held annually as before. A proposal to abolish medals was also negatived. Galveston was selected as the locality for the 1904 convention, and Mr. A. L. Blanchard, of Hillsboro, was elected President of the Association for the forthcoming year.

The Bausch & Lomb Optical Company, Rochester, N. Y., have published a specially illustrated souvenir of their recent $3000 Photographic Competition, containing sixty engraved fac-similes of as many prize-winning prints, and ten papers on photographic subjects by well-known photographers. The souvenir is distinctly valuable to all interested in pictorial photography, and contains no advertising matter. Copies can be had from the Bausch & Lomb Optical Co. for 25 cents.

The Jubilee Number of the Journal of the Royal Photographic Society (London), just received, gives the valuable papers read at the congress held last May to commemorate the Society's jubilee and an extremely interesting series of portraits of famous photographic workers past and present. Among these we note Sir W. de W. Abney, Major-General Waterhouse, A. Von Hubl, Dr. Eder, Dr. Abbe, P. H. Emerson, H. P. Robinson, F. Hurter, Vero C. Driffield, F. E. Ives, W. Willis, and Thos. R. Dallmeyer.

The Eastman Kodak Co. informs us that the $5000 competition recently inaugurated by Kodak Limited (London) is open to all American photographers. Full particulars can be obtained from the competition circular, free on request, at any kodak store.

THE BOY'S THE FATHER OF THE MAN

Moses & Son, New Orleans, La.

ANTICIPATION

Moses & Son, New Orleans, La.

Moses & Son, New Orleans, La.

PORTRAIT

C. Durand Chapman, Newark, N. J.

PORTRAIT

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PORTRAIT

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PORTRAITURE BY THE "ONE MAN" METHOD
Milton Waide, New York

PORTRAITURE BY THE "ONE MAN" METHOD
Milton Waide, New York

MORE ENLIGHTENMENT ON THE "ONE MAN" METHOD.

BY MILTON WAIDE.

I BELIEVE that there is at the present time more interest manifested by photographers in developing papers than is generally realized.

Hundreds of letters of inquiry, many of them coming from remote parts of the world, and frequently from well-known photographers of renown, reach the writer. In every case the belief is expressed that the standard of work produced throughout by one individual who possesses ability, will be better than that made by the hand-to-hand way practised in most studios.

The only query is, "How can a 'One Man' studio (particularly where a large business is done) put out enough to make it pay?" This question is one quite naturally to be expected. The reply is simply this, the "One Man" method does not necessarily mean but one man in the studio. It *does* mean that but one man's brain and hands produce throughout an individual order for portraits.

Let us suppose that a portrait painter of repute, finding his business grown to such proportions as made it impossible to handle it alone, associated with himself two or three other painters of ability, paying them a stipulated salary or division of the profits. An order for a portrait is received. According to the photographer's idea of art production, that portrait would be passed from one artist to the other, until each had had his dab at the canvas. The way it would be done, and the only way possible for successful result, would be that the order would be placed in the hands of one man for complete production. The first plan would result in a conglomerate of several men's ideas. The second in the ideal of one man's brain, and produced by his hands alone. The first is the plan in vogue in photographic studios generally, where the photograph is the joint production of operator, retoucher, printer, and finisher. In the second method, the one the writer preaches for photographers, every photograph represents the work throughout of one individual. Therefore, several men in one studio, each practising a system of "One Man" method photography, similar to that of the writer, would each produce his own portraiture unaided.

But a skeptic says: "There are some objections to your way of conducting a photographic business. In small towns men are necessarily 'One Man' photographers, so where are they aided by your method?" And, again: "Where can one find, so as to employ them, men of the sort your system of photography demands?" Still, again: "If you could obtain such men, could they produce more work of the better sort than the output of the old plan?"

Before answering these questions, I would say that although there are a number of parts into which my method is divided, the time required for each has, by systematizing, been narrowed down by hours, minutes, and seconds, all making a considerable total of time saved. The one prominent basis of the method is successful carbon and platinum like results on artificial light developing papers.

I am obtaining these results, and if I can, you can.

The use of developing papers has three advantages. Seven-eighths of printing process time is saved; prints can be made at any time, regardless of weather; and the quality of work is uniformly good. The last mentioned advantage must be acquired. A thing too easy to accomplish is of no value. How long have you been schooled in printing-out-papers?

It is not surprising that there is doubt that the platinum and carbon effects I write of can be obtained with ease on artificial light developing paper. The demonstrators of these products are not to-day showing what can be gotten out of the papers they represent. For eight years I have not made a print by daylight. What appeared impossible at first is easy now. To be successful with artificial light printing papers is like many other attainments —difficult to acquire, though easy when once understood.

Swimming, bicycle riding, and other accomplishments require "know how" and

practice; then how easy! It is the same with this modern printing method.

The first of the questions before mentioned, "How can the little town man, necessarily a 'One Man' method photographer, gain by my system?" is quickly answered: By artificial light printing. In fact, by doing all but the operating by such a light, and by narrowing down the time required for each part of the business, as the writer has done, he can accomplish the work in one-fourth the time required by his present method of procedure. Thus he gains the other three-fourths of his time to use in promoting and increasing his business, to advertise, get out specimens of his ability, to talk to his patrons, and for recreation. His fingers are not pyro stained. He is not at the mercy of mount and folder manufacturers. He has time to invent and make his own. He can ask better prices for his work, and cuts his expenses for material and wastes little of it. He has nothing to lose by working on this plan and everything to gain. I have pity for the man who stands all day in the printing-room (if it does not cloud up), and then for hours manipulates his prints through wash waters, toning solutions, often obtaining results which do not satisfy. If I could but get that man to my studio, and show him the ease and satisfaction he might enjoy, he would wonder why photographers have so long been willing to work in the old ruts, and have not long ago made good photographs in the easiest and not the most difficult manner.

In answering the second question, "Where could one obtain men knowing such a method of working, and if they could be found could they do the work required in studios of larger business?" I will say that the answer to both parts of the question is made in the following hypothetical statement.

By following the system I daily use, in a given time, one man can do the work of four (this is not exaggerated). A studio could to-morrow discharge an operator, a retoucher, a printer, and an assistant, and, at the end of the week, I will guarantee that I will, unaided, equal the output of the four, working the same hours. Oh! I know you do not believe it. I could not either, were I not doing the same thing constantly. However, to be well within bounds, and allow for different degrees of energy in photographic temperament, I will say the work of three men. I know that I could instruct any good operator so that, in a short time, he could without working overenergetically, equal the output of three good men in the general studio. Now, a studio could pay such a man three men's salaries, which would mean sufficient remuneration to create operators versed in some such "One Man" system. As many of these men could be employed as the condition or amount of business might demand. Two such men could equal the output of six, ordinarily; three, that of nine. Their work would be better because of the brain calibre of the men. Therefore, prices would increase and expenses be cut by little wasted material. Each man in the studio would work on his own inspired ideal, as exemplified in the negative he has made. Each meets his customer, produces unaided and throughout the portrait photographs (even making mounts and folders for them) and places them in the hands of the patron, to whom the idea appeals, first, last, and all the time.

"Different Photography," I call it, and to the customer the idea seems a sensible one. The world over the following is true to-day. Given a new idea, backed up by merit, success is certain. As to artificial light developing paper and its successful manipulation, too many details enter into its treatment (as followed by the writer) to tell it all here.

A great deal depends upon the negative. An ideal negative for any sort of paper must register in the dried print the minutest details to be seen in highest lights and deepest shadows when looking through the negative, and do this with brilliancy, softness, and with platinum and carbon effect. Do you see this in sample prints shown by manufacturers of artificial light developing papers? The negative can be made to give it.

It took just three years of experiment to find the proportioned developer that would give the right relationship of light and shadow in the negative, reproduce them properly on an artificial light devel-

oping paper print, while using the same developer for both negative and print, all of which means a great time saver.

I am certain that a method of "One Man" photography is the coming thing for men of ability. Everything points toward this. There is likelihood of a survival of the fittest in photography as in the other arts, and even now an appreciative public will pay a good price for the brain work of a man of ability, something the mill man cannot produce. I am not theorizing in the statements I have made in this exploitation of my hobby. I have stuck to it for eight years of the twenty I have been behind the camera, and am daily proving the practicability of the method. Therefore, I say again, "If I can, you can." Do you recall the skepticism shown when the dry plate was begging introduction? Watch the future of those using a "One Man" plan.

THE PROTECTION OF NEGATIVES.

BY HAROLD BAKER IN "THE PHOTOGRAM."

ALL negatives that are intended to be kept should be varnished with some protective medium—something that will prevent absorption from the atmosphere. I have had this fact impressed upon me lately while going through a number of negatives some ten years old. The parts of the plates that were varnished were in good condition, but the corners which the varnish had missed were discolored in nearly every instance. The stains were not only those caused by silver paper in printing, but by the absorption of fumes from the atmosphere, which apparently had produced some effect on the silver in the film, as the surface had a metallic appearance. It is not at all surprising that it should be so, when we remember the absorbent character of a gelatine film, and how greedily it mops up moisture from the air; and when that air is laden with sulphurous acid and all the other products from the burning of gas and manufacturing processes, some effect must be produced in the silver image. Silver articles speedily tarnish in large towns, especially in rooms where the old-fashioned gas jets are used; but in country districts, and where the incandescent gas system only is used, the discoloration of silver is much less rapid. How much more the image of a negative is likely to suffer may be imagined when we remember that the image is composed of silver in a state of the most minute division, each particle surrounded by an absorbent envelope of gelatine.

The moral is, that if a negative is worth keeping, it is worth varnishing, but varnishing is of no use unless the negative has been thoroughly washed. Quite recently I realized the truth of this, for a specially prized negative, from which only one or two prints had been made, was brought to me in a most amazing condition. The surface was covered with moisture, the film was blistered and cracked, and the varnish covered with star like marks from moisture. I was much puzzled to account for its condition, but at last concluded that by some accident the negative had escaped washing and had little more than a rinse; a touch with the tip of the tongue confirmed this theory, for it had the excessively sickly sweet taste characteristic of hyposulphite of soda, which had been used for fixing. I was very anxious to save the negative, but how to do so was a difficult question, as the varnish had to be removed; but the film was too tender to bear the least friction, and the negative would need washing, and I knew that the film would leave the glass, probably in places, soon after it was put into water.

It was first of all soaked in methylated spirit to remove the varnish, then placed in water and spirit to wash out the hypo without loosening the film; but at last water only was used, and the film began to leave the glass. With care the whole negative was lifted and floated on to a piece of clean glass, in a mixture of half spirit and water. The blisters and cracks were very carefully arranged with a small sable brush, and the negative was practically saved.

The moral of all this is, that even varnish will not prevent a film of gelatine, containing hypo, absorbing moisture from the air.

The risk of printing negatives before varnishing is very great; perhaps the safest process, with the least risk of injury, is bromide paper.

Certainly it is most dangerous to print in albumen, gelatino-chloride, or platinotype, before varnishing. There is not quite so much danger with collodio-chloride as with gelatine, but there is danger. Platinotype paper of course will not produce silver stains, but it may do worse. Silver stains can be removed without risk of injuring the negative, but if an unvarnished negative containing hypo is printed in platinotype, the ferric oxalate in the paper may combine and reduce the negative in patches, especially in damp weather, I have seen such a case.

There is also another curious thing about platinotype printing from an unvarnished negative, if it has been intensified with mercury, and that it is almost impossible to get a black print; they will all be more or less brown in color, more especially in damp weather.

It is well known that sepia platinotype can be produced by putting mercury in the sensitizer and the developer, but in this case it is in the negative.

The varnishes which are most used are those containing shellac dissolved in alcohol, but one of the most effectual, and certainly the most waterproof, is a celluloid varnish sold under various names, but the powerful smell of the amyl acetate becomes intolerable, so that unless one can do it in an out-house some distance from the rest of the household, family dissensions are inevitable, and the smell is so persistent, it clings about the place for days; and if used at the top of the house, in five minutes it can be detected in the cellar.

Enamel collodion is a good protection and can be applied to the cold negative, but the ladies of the house object to it, as the smell, they say, makes them feel faint—it is so like being at the dentist's. So perhaps the best is the ordinary shellac varnish, but it has the disadvantage that the negative must be warm when it is applied, or the surface dries dead and cloudy.

It is well to varnish at night and allow the negative to stand till morning, so that the surface is thoroughly hard. Such varnish will not resist wet, but it is practically damp proof and is sufficient to protect the film from all ordinary atmospheric changes. One precaution should be observed; the proofs should not be carried out in a draught, or the varnish may be chilled and will dry dead in places. It is easily removed by placing in a dish of methylated spirit and well rubbing with a piece of cotton-wool.

ART vs. FADS IN PHOTOGRAPHY.*

BY LOUIS THORS.

THE question of photography being an art has been brought up before the world at large on several occasions. It has been discussed and debated, and I dare say that every one in our profession holds to the certainty that it is most decidedly an art.

Every one who is a photographer knows that there exists a large margin in the composition of a portrait produced by proper posing. It is not necessary to state that proper posing consists in doing justice to your subject, and careful adjustment of light and shade leads to satisfactory results. The art of posing has undergone, according to the opinion of many, great changes, but it is my opinion that it has not; art is art, and posing is posing. A person who is a genuine artist is always artistic, no matter whom or what he poses. It is not my intention to make remarks of how posing is done or should be done, but merely to compare the different ways some photographers think they have attained the perfect way of posing.

I am convinced that no photographer ever obtains the effect he expects. If he

* From the Convention Souvenir of the California Photographers' Association.

could produce a portrait posed and lighted in harmony with his ideas without calling to his assistance camera, plates, etc., some portraits would be, no doubt, very near perfection; but, as these conditions are not feasible, we have to do the best we can.

Lately several styles of photographs have made their appearance before the public, and some have made a hit; not because they are artistic, but because they are different and odd. Some styles appear dim and hardly visible; some are made with too strong lights and shadows, which spoil the main idea of art, harmony; but, nevertheless, have found some supporters. These styles of photographs are classed under the name "fads," which never last. Styles change; fads do the same. Some of these new ideas are based upon the ground that photographic portraits should not be too sharply outlined, and should show the contours in a subdued light. I fully agree with this, as the effects are more pleasing to the eye and give a certain tone to the work which the intelligent supporters of photographic pictures will admire.

There are several grades of the so-called fads among the professional photographers. Every one thinks his effort the best, and finds necessarily a certain number of supporters to his style. Those who cultivate fad photography seem to ignore to a great extent the details of a portrait. I have been shown photographs which were entirely out of proportion, not possessing the necessary correctness of dimensions, comparatively, to the figure standing or sitting.

It would not be an effort to make many more remarks on this subject, but it is a fact known to every one who has the opportunity to handle portrait photography that it is most difficult to obtain the result desired. The mechanical part of the finishing very often gives disappointment when comparing what you expect with what you obtain.

MAKING OPALINES.

Of all methods of mounting photographs for the decoration of walls, there is none that deserves its popularity to a greater extent than the opaline, says a writer in *Photo. Chat.* It is a method of production that is less seldom employed by the photographer than any other, and this, not because it is more difficult, but simply, so far as we know, by reason of the operations necessary having been little mentioned. Anyone who can make a print on printing-out-paper can make an opaline with little additional trouble and with very little extra expense. The materials required are the prints, as many sheets of glass, which may be perfectly plain or bevelled and gilt at the edges as may seem desirable to the worker, a few sheets of paper to back them up with, and the rings by which they are to be suspended. Even these last may be dispensed with, and loops of tape used in their place. When unbevelled glass is used a few strips of stamped gilt paper will be wanted to finish off the edges. Plush covered bases give a richer effect, but this is a refinement which need not be employed when economy is the order of the day.

In setting to work the best and most picturesque subjects will naturally be selected, and by the best we mean those that are free from defects; for it is troublesome to spot a print in a suitable manner for opaline making. The prints should be rich in color, well toned, and thoroughly fixed and washed, for it is a waste of time to elaborately mount prints that are faulty in themselves, or that may fade and discolor shortly after their completion.

The next point is to obtain suitable glass on which to mount them. Any dealer will provide thin plate, bevelled at the edges, and with a line of gold burnt in at a moderate charge. Those who desire to work in a more economical manner may use the glass from which they have cleaned off spoiled negatives, and this has the merit of being free from the flaws that disfigures even the best quality of window glass. As, however, it will require to have an ornamental binding to conceal the rough edges, we

counsel our readers to get a supply of the glasses made specially for the purpose.

The glasses must be made thoroughly clean and free from anything of a greasy nature, such as traces of soap, and the prints should be allowed to soak in clean water for one or two hours. By doing so the gelatine becomes extremely soft, and is in a condition to adhere permanently to the glass. The worker will note that the conditions are the reverse of those wanted when the prints are to be stripped with a high gloss. In that case the prints should be allowed to dry and then be moistened to as slight an extent as possible. The prints that refuse to strip are, in nearly every case, those that have been taken direct from the washing water when the gelatine is almost in the condition of liquid glue.

To return to the immediate subject. The prints having been well soaked, one of them, together with one of the glasses, are placed in a dish of tepid water; summer heat is all that is allowable, or the gelatine will melt. The two are brought into contact under the water, care being taken that no air-bells have been allowed to form. The face of the print is to be in contact with the flat side, that is the non-bevelled side, of the glass. After they have been withdrawn it is quite possible to slide the print into a central position. Here it may be noted that if the edges of the glass are gilt, trimming may be postponed till after the mounted print is dry, but if the edges are bevelled only, then the print should be trimmed first.

The print should be lightly squeegeed to get rid of the surplus water between, but no force is required—in fact, vigorous squeegeeing is likely to induce air-bells to form, as is also likely to occur if the prints are brought into contact out of the water instead of underneath as described. The mounted print is then to be placed on one side till thoroughly dry, when the backing is to be applied. With clear edges it will be necessary to choose a backing paper that will harmonize with the tint of the picture. White or cream tints are always pleasing, but grays are more pronounced. Colors are admissible if taste is exercised in their selection. When the edges are gilt the color of the backing is immaterial, always provided that the color does not "bleed" and stain the print. Black waterproof paper is to be bought from all dealers, and is desirable, as it protects the picture from injury by damp.

Before pasting on the outside backing the rings should be cemented down, as the backing helps to keep them in place. These rings may not always be obtainable, and in such cases a loop of thin tape pasted by the ends to the back of the print will serve the same purpose. It is well to put the loop so far down that it shall not appear above the top of the opaline. When for the sake of economy negative glasses have been used, it will be desirable to bind the edges with some fancy material, and probably there is nothing better for the purpose than the narrow gilt paper used by those who make fancy goods. It can be bought from most fancy goods depots. It ought to be applied after the manner that lantern binding is attached. The back is well pasted, and the edge of the opaline placed in the centre of the strip, it is then rubbed down back and front. To neatly finish off the corners it should be cut to a mitre.

When made in small sizes, such as quarter plate, a number of waste negatives, say four or five, may be glued one on top of the other on the back, and the edges bound with paper to form a paper weight as handsome as it is useful. In this instance the rings or loops of tape are omitted. When circular or oval shapes are to be made up, the glasses and gilt metal bindings can be bought to fit.

Winter is the title of a beautifully illustrated volume just issued by Harper & Brothers, New York, at $2. It comprises selected verses by famous poets and more than fifty photographs of as many different winter scenes by Rudolph Eickemeyer, Jr. The pictures show that Mr. Eickemeyer is a past master in this difficult branch of photography and form the finest collection of the sort we have seen. No photographer interested in winter work with the camera out-of-doors should miss this delightful volume and its valuable lessons in composition and the treatment of the subject.

THE CALIFORNIA CONVENTION.

THE first annual convention of the newly-organized Photographers' Association of California was held at Mechanics' Pavilion, San Francisco, October 29th to 31st, inclusive, and will go down into history as the beginning of a new era for professional photography on the Pacific Coast.

The California Association had its inception last April, when a few prominent San Francisco photographers got together in a social way. The club thus formed for mutual good fellowship was permanently organized into a State Association in May, when F. A. Webster, of Oakland, was elected President; M. M. Morrison, Vice-President; D. F. Mullender, Secretary, and H. G. Vaughan, of San Francisco, Treasurer. From this auspicious beginning the Association held monthly meetings, keeping alive the fraternal spirit which had given it birth, and preparing for the Convention with that enthusiasm which is generated by frequent discussion.

In June the late F. W. Guerin, then located on the Pacific Coast, gave the club an address on "Flashlight Photography," which resulted in his being thereafter actively identified with the Association's interests until his death a few months ago. In July a directorate was formed to perfect the arrangements for the Convention, F. G. Schumacher, of Los Angeles, being named as the chief director. In September the Association sent an exhibit of photographs to the Northwest Convention at Salem, Ore., thus demonstrating its wide-awakeness and fraternal enthusiasm. Perhaps the greatest work accomplished by the Association, however, is the breaking down of that barrier of distrust heretofore existent among the craft in California, and the creating of a new spirit of fraternity and good-will which is bound to improve the standing of the profession in years to come. Among those who have given time and work to the Association's interests, insuring its success and well-being, mention should be made of L. D. Hicks, O. H. Boyé, I. W. Taber, Will Lussier, Louis Thors, L. F. Terkelson, I. H. Latour, and other well-known photographers of San Francisco and vicinity.

The pictorial souvenir issued by the Association is remarkable for the excellence of its illustrations and a series of papers on timely topics contributed by members of the Association. Some of these papers will be found on another page of this issue.

First Day.

The art gallery of the Mechanics' Pavilion was well arranged for the display of the Convention exhibit, consisting of over a thousand examples by Western and Eastern workers.

At the opening session, October 29th, President Webster congratulated the Association on the remarkable exhibit assembled in the art gallery, and expressed his confidence that the Convention would be of inestimable value to those who had worked hard for its success. He also spoke of the fraternal spirit and its obvious advantages to those who are working along similar lines.

Mr. L. P. Latimer then addressed the meeting upon the part played by art in photography. He criticised the methods of posing and lighting followed in many photographic studios, and said that the unnatural poses often turned out by photographers are the natural result of neglected training in this department of their work, urging his hearers to devote more attention to getting a broader understanding of posing and lighting as essential to their success.

Mr. Geo. L. Wilcox next demonstrated his methods of posing and lighting under the Convention skylight, the demonstration being followed with great interest by all present. This was followed by a demonstration of flashlight portraiture by Mr. J. F. Mullender, including the development of the negatives and making of the prints. Mr. L. J. R. Holst then gave an address on "The Lens," with special reference to portraiture, his address being most enthusiastically received. Mr. Ira Latour followed with a demonstration of platinum printing, which was in turn followed by similar demonstrations in gum-bichromate

and carbon printing by O. V. Lange and T. H. Wilton respectively.

In the evening the art exhibition was thrown open to the public, and hundreds of San Francisco's best people honored the photographers by their attendance at the show. Almost every photographer in the city and State was represented by an example of his best work, and these, with the numerous exhibits from other parts of the United States, drew admiring comments from the visitors until a late hour.

Second Day.

Business and pleasure were combined in the Convention's second day. The morning session opened at 9 A.M. with a demonstration of Aristo papers by Ira Latour. Negatives were made and printed under the Convention skylight, Mr. Latour answering all questions in a way which those present said was "worth a whole year's subscription."

At 1 P.M. all the galleries in San Francisco closed by agreement, and the photographers and conventioners took a special steamer chartered for a trip around San Francisco Bay. Louis Thors, Col. Taber, O. H. Boyé, Jos. F. Mullender, Geo. F. Kelly, and L. F. Terkelson had charge of the excursion, and provided generously for the pleasure of their guests. A most enjoyable time resulted, the trip ending in time to permit the photographers to attend a theatre entertainment in the evening—according to programme.

Third Day.

The Convention's third day was marked with the same bustle and enthusiasm as the preceding days. The morning session opened with demonstrations of various printing papers, after which Mr. John M. Gamble addressed the meeting upon "The Criticism of Pictures," taking examples from the art exhibit and pointing out their merits and faults in a clear and convincing way. In his opinion, the heavy printing now so general in the profession is an error, and he advised a closer study of the lighter shades and higher range of tones. Then followed a three hours' demonstration of lighting and posing by the leading operators of the coast, which was attended by much enthusiasm. Actual negatives and prints were made during this demonstration.

At the afternoon session a number of well-known photographers, including I. W. Taber, H. C. Vaughan, Otto Boyé, D. F. Mullender, and Louis Thors, addressed the meeting and answered questions. At the close of this session the members adjourned in a body to join their friends in the art exhibit, and the Convention was ended.

In the evening the Association gathered for a banquet, music and song being indulged in until an early hour, and everybody present voted the first California Convention the greatest event in the history of photography on the Pacific Coast.

THE IOWA CONVENTION: 1904.

A Practical Convention for Practical Photographers.

THE Executive Committee of the Photographers' Association of Iowa held a meeting at the office of the Secretary on November 9, 1903, with a full attendance. President Reynolds, of Washington; Treasurer Baldwin, of Ft. Dodge; Secretary Townsend, of Muscatine.

The programme planned promises to be most interesting. The time set is April 19th, 20th, and 21st. The "ice-breaker" given on Tuesday evening will be in charge of the Convention. This will be an informal experience meeting. No cold bottles will be opened, but considerable ice-cream will be disposed of. The hall selected is the same as that used for last year's Convention, and is well arranged for demonstrations, displaying exhibits, etc.

Features of the Convention.

Lecture by George G. Holloway, and demonstrations in the hall in lighting and posing by the same gentleman. Negatives

will be made, developed, and shown to the Association in this demonstration.

On Wednesday and Thursday mornings practical demonstrations will be given at Webster & Edinger's studios by the following practical photographers: Frank Medlar, Spencer; M. W. Starks, Sioux City; Thomas A. Brown, Marshalltown; F. W. Webster, Des Moines; Edinger, Des Moines; H. O. Baldwin, Ft. Dodge; Wm. J. Reynolds, Washington; Brandt, Davenport. The demonstrations by the above gentlemen will occupy one-half of the hour given for this purpose, and the latter half-hour will be occupied by the demonstrators of the various plate companies.

The Convention will give no prizes except the Grand Portrait Prize; for out-of-State photographers, the Fell trophy and Inter-State exhibit awards. The judging of these classes will be left to a popular vote of the Convention. This will be done by ballot. There are several reasons why the Executive Committee have chosen this method of judging these classes. First, because it is extremely hard to get competent men to act as judges; second, because this method will cause each member of the Association to make a careful study of the work admitted for competition in these classes so that an intelligent vote may be cast, thus acting as an educator; third, because every fair-minded photographer is willing to abide by the decision of the majority, and because every man who is entitled to a vote should and will feel that his very best judgment is required.

Anyone who is found soliciting votes will be barred from competition. This is out of the question, as all Iowa photographers are honorable men.

A beautiful engraved certificate of rating will be given each person who has an exhibit at the Convention.

C. F. TOWNSEND,
Secretary.

STUDIO NOTES AND JOTTINGS.

BY "PROFESSIONAL."

PROFESSIONAL EXHIBITIONS.

MEN may come and men may go, but the average photographer's love for inspecting pictures and criticising them freely, very freely, goes on forever. To me the annual outbreak of photographic exhibitions is a good sign, for it indicates a healthy interest in all that concerns photographic picture making. In the history of pictorial photography each period of advance has been accompanied by the fiercest discussions in the press, and the holding of numerous exhibitions by rivals in pictorial methods, each striving by their examples to gain the ascendency. An exhibition also attracts the general public, being an appeal to a larger audience than is found among those directly interested. From this point of view the exhibition forms a valuable means of advertising, and one that has been neglected by the professional photographer. I have seen one or two exhibitions held by professionals at their own premises which have been highly successful in drawing public attention, and am surprised that the practice is not more common. To the photographer in a small way the annual exhibition would perhaps be impossible, though even he could specialize in carbons or platinums and hold an exhibition of specimens of his work in these processes. From what I have seen of such exhibitions, I am convinced that they result most beneficially to the photographer who undertakes them.

THE SPECIALIST.

The most marked feature of modern photography which distinguishes it from its earlier years is that the specialist is now everywhere in demand. In past times that prodigy the "all-round man," who could work every known process, and knew all about the science and practice of photography, was the leading type of photographer both as employer and employed. Such practical and scientific knowledge was in those days quite possible. Nowa-

days, so varied are the applications of photography, and so extensive its scientific development, no man could possibly obtain a thorough knowledge of all its phases. There are a few old photographers who lament the extinction of the "all-round man," asserting that the modern specialist is his inferior even in the branch in which he specializes. Whatever may be the defects of the specialist, it is certain that he is here to stay, and that the "all-round man" has little chance of success in competition with him. In portrait photography this subdivision is rapidly taking place. Several of our lady photographers do not book sittings for men; and, on the other hand, one of our London photographers turns a deaf ear to the voice of the feminine charmer. An American photographer is equally indifferent to the fair sex, and that there should be no mistaking his feelings, he boldly advertises himself as a "photographer of men." When the "all-round man" observes these things he must begin to doubt the wisdom of his theory.

WASTE OF MATERIAL.

It is remarkable to note the difference of opinion which exists among photographers in respect to the question of waste —some regard a high proportion of waste negatives and prints as inevitable, while others are of the opinion that all waste is preventable. This difference arises from the fact that the decision of what makes waste material depends on the standard of work required. The higher the class of work turned out, the greater must be the proportion of waste. It does not necessarily follow that this waste is caused by bad work or careless manipulation; for it may be rejected on comparative tests. However skilful a worker may be, his results will never be quite uniform, and if only his very best will pass a given standard, it follows that a large proportion of his work will become waste. In all first-class houses it is a common practice to reject negatives and prints which would pass as faultless under a lower standard, because nothing but the best must receive the hall-mark of the firm. An expert platinum printer engaged by a West End firm once assured me that he had known his employer to reject his work for a whole week, and from my personal knowledge I can vouch for an operator who spent a day in making 15 x 12 enlarged negatives before he secured one that was considered perfect. This determination to have at any cost the best and only the best negatives and prints is the secret of all high-class photography, and in my experience the better the work the larger the proportion of waste.

STUDIO HUMOR.

The comic papers from *Punch* downward often contain humorous pictures depicting incidents in which either the photographer or his sitters are the active agents. I have sometimes thought that if these pictures were collected they would form a most interesting and entertaining book for photographers. The typical photographer in these drawings is a long-haired, thin, and sad-faced man, somewhat mysterious in bearing, and giving one the impression that had he the mind he could unfold some terrible secrets connected with his profession. In nearly all of them he is treated with respect if not with awe, and it is always the sitter who is made an object of ridicule. Hogarth, it is said, was the only man Pope was afraid to lampoon, the brush in this case being mightier than the pen, and it may be that the comic artists of our time are afraid of the photographer's powers of retaliation in depicting their personal appearance. In these days of the illustrated interview it is well to be on the side of the photographer. He is a power in the land, and it depends on him to make or mar a reputation for beauty. The photographer's apparatus is not treated with similar respect, the camera, lens, and stand being of a form never seen on earth or sea, and the head-rest enough to make the boldest tremble, while most of the jokes are of the "chestnut" variety.

ABOLISHING THE DARK ROOM.

The amateur photographer has always been the pioneer in photographic revolutions, and it is a truism that what the amateur is doing to-day the professional will be doing to-morrow. Judging by past experience, it would seem that we are

about to see the dark room vanish into the limbo of pre-gelatino-bromide appliances, for the amateurs have already doomed it to extinction. What with developing machines, stained developers, and plates which can be developed in ordinary daylight, the dark room is being assailed on all sides, and is having a hard fight for its existence. There can be no question that if the dark room could be abolished it would add greatly to the comfort of professionals, besides having a beneficial effect on the state of their health. In a few cases it is true that the dark room does not have any injurious effects. In some instances an hour or two in a dark room leads to depression of spirits, faintness, and nausea. These results are mainly due to the confinement and defective ventilation, although I believe that under the best conditions the red light would still lead to similar results in some individuals. It may be a fancy, but in my own case the bright-yellow light of the dark room of collodion days seemed to have a stimulating effect, while the ruby light of to-day gives rise to depression. Comparing the various methods in vogue for abolishing the dark room, the only one which appears likely to meet professional requirements is the developing machine, and should films come into general use, it is probable that an instrument of this type would take the place of a dark room for the bulk of development. While plates are still used, the dark room is likely to survive, for they do not lend themselves mechanically to such methods of development.—*Photography*.

ENLARGED NEGATIVES: A SIMPLE METHOD.

Now and again the professional photographer could make profitable use of a negative of a special subject if it could be obtained without the labor and expense attendant on the usual method of making enlarged negatives on glass plates. Mr. Chapman Jones describes in the *Amateur Photographer* how such negatives may be made on bromide paper at a trifling expense and with little labor other than is required in making a bromide enlargement. We quote:

The ease with which direct enlargements can be made with a properly arranged projection apparatus, and the possible variety and excellence of the result, will always make enlarging on bromide paper a popular process. But there are advantages in other methods of printing which do not lend themselves to the direct method of enlarging, such as the various platinum and carbon processes, and for these a large negative is necessary. The greater number of amateurs consider any negative larger than a half or a whole plate as needing for its production a very considerable addition to their equipment and to their expenses. I wish to point out that anyone who has the means of making enlargements on bromide paper can with very little, if any, addition to his apparatus make enlarged negatives and print from them by any process, including printing-out methods. And both platinum and carbon are printing-out methods in the strict sense of the term, for the exposure is carried on until the full chemical change representing the image has taken place, and the so-called development consists of nothing more than revealing the image already produced.

In making an enlarged negative from another negative there must be an intermediate positive. The enlarging may be done in the production of this positive or in the production of the final negative, or at both stages. As there is more possibility of falsifying the gradation (by over-or underexposure or faulty development) in a development than in a printing-out process, it is desirable to use a printing-out process at one of the stages. The ordinary trade method of enlarging secures this advantage by the preparation of a carbon transparency and enlarging from it, while the method advocated by Mr. Valentine Blanchard of making an enlarged positive and printing the negative from this on albumenized silver paper gives the same advantage but at the second stage. The chief difficulty with amateurs who have limited accommodation is the manipulation of large glass plates, especially in the

absence of a camera of similar size. Therefore, an enlarged transparency is well avoided, and this course has the further advantage of economy and the fact that a transparency can be made by superposition of negatives of any kind, including those that are too dense or vigorous to serve well for direct enlarging.

The method that is of all the most suitable and the safest, that is, the least liable to give faulty gradation, is the single transfer carbon process. It is only necessary to expose the sensitized tissue, squeegee it on to a clean piece of glass, and develop in warm water as usual. It is often recommended to give the glass a preliminary coating with a weak solution of bichromated gelatine, and it used to be advised to coat the exposed tissue with collodion before transference. While it can hardly be said that these precautions are altogether useless, in nineteen cases of twenty their advantage is not obvious. The only aim of these preliminary coatings is to prevent the washing away of detail that it is desired to preserve. If therefore such a fault should occur, the remedy is known. By using the simple clean glass the preparation of a carbon transparency is exceeding simple and takes very little time. If more convenient, a slow gelatine emulsion plate must be used; but in this case the exposure must be correct, so that straightforward and normal development gives a satisfactory result, otherwise the gradation is almost certain to suffer. However made, the transparency should be full of detail and of that rather thin kind that in the case of negatives is known to be the most suitable for enlarging from. This positive is then put in the lantern and an enlargement made from it in the usual way on bromide paper, but with a rather longer exposure and development than if the final print were being made. Indeed development should be continued until the detail is almost buried. The bromide paper selected for making this enlarged negative on should be of the smooth-surfaced kind, and although it is not necessary, it is preferable to wax it before printing from it.

As to the additional apparatus necessary. Those who make direct enlargements from their negatives will already have the necessary dishes. For the information of others, it may be remarked that porcelain dishes larger than 12 x 10 are heavy, and that glass-bottomed dishes, just a pane of glass set in a wooden frame, are cheaper and more handy. If they leak, the angle where the glass meets the wood may be varnished with any good waterproof varnish. The strong shellac varnish known as "French polish" may be used, but I think a good black bicycle "enamel" is better. A metal tray, made of zinc or "tin," if coated two or three times with such an enamel, will make a serviceable and light dish.

The waxing is an additional operation. It may be avoided by using films specially made for negatives, but these are often inconveniently rapid for use in the open, as when the image is projected by a lantern. "Waxing" used to be done with castor oil, either hot or cold, or by the application of a thin vaseline. But all such liquid substances work out of the negative in time, and so prove a source of annoyance, besides having a tendency to collect dirt. It is better to use paraffin wax. The otherwise finished and dry negative is laid on two or three thicknesses of clean blotting-paper, and worked over with a hot and scrupulously cleaned flat iron, holding a piece of paraffin wax against the nose of the iron, so that enough is melted to thoroughly saturate the paper. I have a small "box" iron that is very convenient. The final ironing may be with a sheet of blotting paper over as well as underneath the negative, to absorb any excess of wax. When cold, there should not appear any paraffin projecting from the surface of the negative, but it is possible to remove too much and cause the grain of the paper to show again. When thoroughly cold, the negative is ready to print from.

For printing, a frame with a plate-glass front is convenient, but in the larger sizes it will be found heavy and rather expensive. It is not necessary. Mr. Horsley Hinton has described how he prints from large negatives without a printing frame, using a drawing-board to support the paper and negative. Shortly, a few thicknesses of smooth (uncreased or crumpled) paper are placed on the board, then the printing paper, then the enlarged negative, and finally a sheet of plate glass. It will be

rather troublesome and always risky to inspect the paper as the printing proceeds, but this is useless in carbon printing, and it will tend to success in platinum printing if these exposures also are regulated by means of an actinometer. The development of a carbon print requires a dish a little longer than the print. Such a dish made of "tin" is not very costly. A platinum print may be developed cold, by laying the exposed sheet on the sheet of glass used in the exposure, if economy of apparatus is essential.

It is perhaps hardly necessary to add that anyone performing such operations as described for the first time should practise a little on worthless material or small pieces of paper before using a large sheet. Some waste bromide prints, if on similar paper to that described, will serve for practice in the waxing operation. The most probable cause of failure will be the use of a dirty iron.

ACTINIC REFLECTIONS.

BY J. MOORE.

THERE is a wonderful range in underexposure; in what appears the same degree of underexposure. In a studio where, say, five seconds are necessary to the obtaining of a good detailful print, three seconds will give a hard negative in which the whites are sufficiently exposed, but the shadows "approximating clear glass." It will be found that with a one-second exposure very much the same result will be obtained.

There is a rather important hint behind this discovery. A negative in one second —giving the light parts—suggests a sufficiency of light. The need for five seconds to render the shadows suggests that the light is unevenly distributed. There is no finality in art or in cleanliness, and in the latter fact we have the key to the situation. A window grows imperceptibly but steadily grimy, so gradually that it is not until we clean one of the panes that we realize how much light we have been losing. That loss is direct light, and we are all alert as to the necessity of keeping glass clean. It is in the reflected light that we fail. The clear white of a reflector yellows with age—often with a very little age; and it does not take much yellowing to make the reflector about as valuable as a screen of brown paper. Our studios are constructed with a wide expanse of clear glass against a clear sky. We use all our energies to pour a wide flood of light on our sitters, and where we cannot get the flood of direct light—and we cannot get it into *every* shadow—we use a reflector. Suppose we keep our great flood of light and use a reflector of pure virgin blue—white—the white of snow or of some brands of blotting-paper. Our shadows will not look much lighter to the eye than they did before; but the plate will find a difference. No need now to give five seconds' exposure; try three seconds, and the clear-glass shadows will be there no more. Instead we shall have a flat negative, without modelling or any contrast—a most impossible one for a customer. Then what is the advantage of keeping the reflectors actinically clean? Possibly to many workers there is little advantage in their present studios. They have the glass area and the light, and they are used to its working; let them continue it. But let them screen off the direct light and give the three seconds' exposure. The negative now will be sufficiently brilliant, and all the modelling will be there. Except for the highest lights we have been content with reflected light, and it has done the work well. The speed of working has been increased, and the quality of the negative has been improved.

The usual custom in studio building is to provide a superabundance of light, and to block out a part of it with blinds. This habit is a survival of the old days, when lens apertures were small, and when plates were slow. Following old custom has kept us on the roofs and under weather-weak glazing. Let a photographer consider how little light he really uses, and he will be surprised at the reserve possibilities

of light practically untouched—the light which is permanently blocked out. Really, if intelligently considered, it will be found that there is little or no need for our abundance of glass. Once let this fundamental be mastered, and we are half-way toward the advantages of the side-light studio. I am not advocating a side-light as such; my studio is aloft, and will continue to be while my lease runs. But with the chance of a side-light, choice of location becomes so simplified. The choice is much wider, and by bringing the studio near the ground floor—for this is the first and greatest commercial advantage of a side light—we make it more accessible to the "better half" of our customers. It is not necessary that either the walls of the studio or the reflectors themselves be pure white. Probably the latter will be, for white reflectors need not interfere with a scheme of decoration. But a full measure of actinic rays may be obtained from a delicate pink or blue—from any tint toward the actinic end of the spectrum.

A study of reflectors and reflected light will show any photographer that the usual light supply is extremely prodigal; and a little knowledge of the practical possibilities of actinic reflection will go far to emancipate him from his present hampered choice of location.

TRANSFERRING POSITIVE FILMS TO CONCAVE GLASS SURFACES, AND COLORING THEM.

BY A. J. JARMAN.

AMONG the many profitable minor processes in photography there is one by which excellent results are obtainable by the transfer of a collodion film from paper to glass which when tinted or colored upon the back present a very charming effect. Transparencies may also be produced by the same means, and oftentimes a very profitable business may be created by the production of these colored pictures. A few years ago a process was in vogue under the name of the crystoleum process, where an albumen print was attached to a piece of glass, and made semi-transparent by means of wax and Canada balsam. The process to be described differs considerably from the crystoleum process, because the paper support is entirely removed, and the collodion film containing the printed and toned image alone is allowed to remain upon the glass, the coloring being done upon this film, and not upon the paper support, as in the crystoleum process. There are several good collodion surface printing-out-papers upon the market at the present time. The collodion printing paper that has proved very successful for this transfer work in my hands is Aristo Platino. A print of the subject required is made upon this paper, the printing being about two or three shades deeper than desired. It is then washed and toned in any good gold toning bath, such as the following:

Chloride of Gold . . .	3 grains.
Water	20 ounces.
Bicarbonate of Soda . .	10 grains.

After toning, the print is washed and fixed in a solution of hyposulphite of soda of the following strength:

Hyposulphite of Soda . .	1½ ounces.
Water	20 "

Ten minutes in this bath will fix the print, which must then be well washed and dried. If it is desired to tone the print in platinum as well as in gold, then the print may be made in the usual way, and printed much deeper than for gold toning alone.

The next operation is to paste the print upon the back with a soft and rather soluble paste, and mount it upon a piece of *thin* cardboard. As soon as the print is perfectly dry, it must be coated all over with a lacquer called "Albaline." Allow the excess of lacquer to run off at one corner and return it to the bottle. The print must be allowed to drain and dry. If coated in the evening, the lacquer-coated print will be perfectly dry the following morning. The following cement must also be made up, ready for use:

Gelatine	120 grains.
White Sugar	20 "
Water	5 ounces.

The print, with its cardboard support, must now be allowed to soak in a tray of hot water. It is a good plan to let the print remain in cold water for about half an hour previous to its being placed into the hot water. In a few minutes the paste softens, and the paper print can be removed; the only object in mounting the print is to coat it evenly with the Albaline. The soft paste may now be wiped off the prints and the concave glass support, having been well cleaned, is coated with the warm gelatine solution, and the print while still wet must be blotted and at once carefully pressed into the concave surface, so that no air-bubbles are visible. A few pieces of blotting-paper cut to the size of the concave surface can be used, or a pad and a weight placed thereon until the gelatine is nearly dry. The pads are then removed, and the glass with the print attached allowed to become perfectly dry and hard. The glass is next immersed in hot water, and must be watched. In the course of a few minutes the paper can be removed, leaving the collodion film upon the glass. It must now be carefully rinsed and stood aside to dry away from dust.

As soon as the film is dry, it should be coated over with a good matt varnish previous to coloring, the varnish supplying a tooth to receive the coloring. The following is a good varnish for this class of work:

Sulphuric Ether	2 ounces.
Gum Sandarac	90 grains.
Gum Mastic	20 "
Benzole	1 ounce.

Allow the gums to completely dissolve, and after standing for a day or two pour off the clear varnish into a clean bottle for use.

The coloring may be done either in oil or water color, oil colors being preferable. The colors are applied with a brush to the matt varnished surface in tints, as required, the progress of the work being readily seen from the front. The color is allowed to dry, and the print is finally backed up with a piece of white paper or thin cardboard.

These films can also be transferred to the centre of a plate, or to opal glass, and whether colored or not pictures produced by the method described are effective and find ready sale. If the transferred film is to remain on the open glass or porcelain, then the matt varnish must be omitted, this varnish being used only when the film is to be colored. To prevent the transparency becoming injured by handling, it should be coated over with Albaline, thinned down to a suitable consistency; the surface will then be perfectly protected against damp or other sources of injury.

EDITOR'S TABLE.

OBITUARY: ROBERT BENECKE.—We record with sincere sorrow the death of Mr. ROBERT BENECKE, of St. Louis, who died at his home in that city on November 3d, after a short illness. As an old-time photographer, and as superintendent of the CRAMER DRY PLATE WORKS Mr. BENECKE was very widely known among the fraternity. He was born at Stiege, in the Harz Mountains, Germany, in 1835. He mastered daguerreotypy in 1854, and later came to this country. During the early sixties he followed photography as a business in Missouri and Tennessee, eventually locating in St. Louis, where he associated himself with Mr. HOELKE, under the firm name of HOELKE & BENECKE, 14th and Main Sts.

When the artotype process was exploited in the early seventies Mr. BENECKE was among the earliest of those who took that process up, and he attained a considerable success in the work. A few years later he took his position as superintendent of the CRAMER DRY PLATE WORKS, which post he held until the time of his death.

Apart from his skill in photography, which was unquestionable, Mr. BENECKE was master of several languages, and his contributions to photographic literature embraced translations of very many important articles from foreign journals during the past twenty years. He was a broadminded, generous-hearted man, modest as to his attainments, and very much beloved by his family and all who knew him. We extend our sincere sympathy to those who knew him best and will miss him most.

WE are asked to announce that H. A. HYATT, the well-known and progressive manufacturer of St. Louis,

will move into a handsome new store at 316–318 North 8th St., directly opposite the Post Office, about January 1st. The new building is situated in the very heart of the World's Fair city, and is in every way better adapted to Mr. HYATT'S large and growing business than his present location. In the new store there will be abundant room and larger facilities for handling orders, as well as for the receiving of visitors during the Fair next year. Mr. HYATT has our hearty good wishes in this evidence of growth.

AN AMERICAN SUCCESS.—We are pleased to note that in the recent photographic competition open to the world, inaugurated by C. P. GOERZ, of Berlin, the firm of WM. MILLS & SON, of Providence, R. I., met with flattering success. Their flashlight entry in this contest was awarded the first prize in its class, equivalent to $50 in American money. Mr. MILLS informs us that he sent the picture in for competition with the conviction that he would hear no more about it.

The GOERZ competition was among the most important competitions of recent years, and examples of work were submitted from all the countries of the world. The judges were photographic critics of high reputation, and the honor won by our subscriber is very greatly to his credit.

Mr. MILTON WAIDE, whose article on "One-man Photography" appears on another page of this issue, asks us to state that he gives personal instruction in this method at his studio if desired; also, that in all copies of his *Treatise* sent out hereafter he will insert a print on development paper, illustrating the possibilities of these papers as explained in the *Treatise*, including the card mountings, folding papers, and ribbons, as used at his studio.

THE PHOTOGRAPHERS' ASSOCIATION OF CALIFORNIA.—We are glad to see that the young and enthusiastic California Association keeps up its monthly meetings, and does not propose to be content with an annual convention. At the last monthly meeting, held November 28th, the report of the Convention Committee was received, and similar matters of local importance were discussed. We trust that Secretary MULLENDER will keep us informed as to the progress of the Association and the business of its meetings.

THE question of admitting cameras to the forthcoming World's Fair at St. Louis is still in abeyance. At former expositions the mistaken policy was followed of taxing even the use of small hand-cameras used within the exposition grounds. There is neither sense nor reason in this, and such a rule can only create annoyance and rob the exposition of a considerable amount of free advertising. We hope that the authorities at St. Louis will look at the matter from a common-sense point of view and permit the use of hand-cameras for plates 4 x 5 and smaller without any tax whatever, provided that no tripod is used.

ONE of the most attractive studio advertisements received during the year comes to us from the studio of Mr. WALTER L. GRAY, of Memphis, Tenn. Some time ago Mr. GRAY decided that Memphis offered a desirable opening for a high-class portraitist, and built for himself a studio in the residential section, quite away from the business part of the city. In order to draw the particular class of business desired to the studio an elaborate campaign of advertising was planned, of which the announcement here noticed forms a part. The announcement consists of a carefully worded invitation to a studio exhibition of portraiture, designed to serve as an "opening" for the winter season. The invitation is printed in black text, with a gold initial letter, on parchment, 6½ x 9 inches. This is enclosed in a plate paper-folder bearing a steel-engraved vignette portrait on the front cover and the initial "G" on the flap in two tints, the enclosure being tied with silk ribbon. A second folder, of deckle-edge cream cartridge paper, encloses the first folder, and the two are finally enclosed in a stout mailing envelope of appropriate color, bearing the initial "G" stamped in light blue tint. This brief description conveys only a faint idea of the distinctiveness and tasteful appearance of the announcement which, mailed to a selected list, brought to Mr. GRAY'S studio a goodly number of the most desirable people of Memphis. Mr. GRAY deserves great praise for his appreciation of the advantages of publicity in building a business and for his discrimination in the choice of advertising media. We wish for him the success his methods should obtain.

MR. and MRS. H. SNOWDEN WARD, editors of the *Photogram*, London, are spending a few weeks in this country, visiting old friends and renewing their acquaintance with the photographic field on this side. Incidentally Mr. WARD is lecturing on "Shakespeare's Town and Times" and "The Real Dickens Land" in several of the winter lecture courses of New York and vicinity. Mr. and Mrs. WARD'S new book, *The Real Dickens Land*, which is warmly praised by the English press, is published in America by the J. B. LIPPINCOTT CO., of Philadelphia, at $3.50. It describes the fast disappearing scenes and localities made famous by Dickens in his novels, and is profusely illustrated with photographs by Mrs. WARD. It is a volume which will be treasured by every lover of CHARLES DICKENS, and abounds with interest.

Our readers will be interested to learn that we have completed arrangements for a series of articles for these pages in 1904, written by Mr. H. SNOWDEN WARD, and illustrating, by means of portraits of himself by various European and American photographers, the methods and results obtained by famous portraitists dealing with the same subject.

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